



FEDERAL COMMUNICATIONS COMMISSION

47 CFR Parts 1 and 54

[WC Docket Nos. 11-10 and 19-195; FCC 21-20; FRS 17540]

Establishing the Digital Opportunity Data Collection; Modernizing the FCC Form 477 Data Program

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: In this document, a *Third Report and Order* adopted by the Commission establishes important measures for collecting highly accurate and reliable broadband data, including requiring facilities-based fixed service providers to report broadband Internet access service coverage in the Digital Opportunity Data Collection and to identify where such services are offered to residential locations as well as where they are offered to business locations; requiring the collection of speed and latency information from fixed service providers; requiring terrestrial fixed wireless services providers to report on the coordinates of their base stations; and requiring mobile providers to provide additional information reporting concerning provider networks and propagation, which will allow the Commission to verify provider data more effectively. In addition, the *Third Report and Order* establishes the requirements for challenges to fixed and mobile service coverage reporting and for challenges to the Fabric data. The *Third Report and Order* also establishes standards for identifying locations that will be included in the Fabric and establishes standards for enforcement of the requirements associated with the Digital Opportunity Data Collection.

DATES: Effective [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

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SUPPLEMENTARY INFORMATION: This is a summary of the Commission's *Third Report and Order* in WC Docket Nos. 11-10 and 19-195, FCC 21-20, adopted January 13, 2021 and released January 19, 2021. The full text of this document is available for public inspection on the Commission's website at

Synopsis

I. INTRODUCTION

1. The Commission has long recognized that precise, granular data on the availability of fixed and mobile broadband are vital to bringing digital opportunity to all Americans, no matter where they live. To meet the need for such data, in August 2019 the Commission adopted the Digital Opportunity Data Collection, a new data collection distinct from the FCC Form 477, to collect geographically precise and detailed data on broadband service deployment, which would be subject to stakeholder challenges. In July 2020, the Commission adopted a *Second Order and Third Further Notice* in this proceeding that implemented requirements of the Broadband DATA Act, enacted in March of 2020, and further developed the framework and elements of the Digital Opportunity Data Collection.

2. Today, we build on our earlier action creating the Digital Opportunity Data Collection and take key additional steps to ensure that both the data collection itself, and the measures for verifying the accuracy of the data collected, will yield a robust and reliable data resource for the Commission, Congress, federal and state policymakers, and consumers to evaluate the status of broadband deployment throughout the United States. With Congress's recent appropriation of funding for the implementation of the Digital Opportunity Data Collection, the action we take today will help to ensure a rapid and smooth transition to the new mapping platform.

II. BACKGROUND

3. The Commission began collecting data on broadband services, along with local telephone service and mobile telephony service, in 2000 with the establishment of the FCC Form 477 data collection. Initially, the Form 477 data collection was limited to subscribership information from broadband Internet access service providers. In 2013, the Commission revised Form 477 to begin collecting deployment data, in addition to subscribership information, from such providers. The 2013 revisions required broadband Internet access service providers to report lists of the census blocks in which they make service available to end users and to report the maximum speed offered in each census block, distinguishing between residential and non-residential services and by the technology used to provide service. This reporting format made available a nationwide broadband deployment dataset and

significantly improved the Commission's understanding of the state of broadband deployment, enabling analyses that were previously not possible. The Commission has used the Form 477 deployment data to monitor the state of broadband deployment in annual reporting and to identify the unserved parts of the country for purposes of providing universal service support for broadband deployment, among other Commission proceedings and actions. Over time, however, it became clear that improved broadband data were needed to implement the Commission's Universal Service Fund (USF) programs and to support efforts to bridge the digital divide. Accordingly, in 2017, the Commission adopted a Further Notice of Proposed Rulemaking seeking comment on a variety of issues associated with improving the quality and accuracy of the broadband information the Commission collects as well as on how to streamline reporting requirements and thereby reduce filer burdens.

4. In August 2019, the Commission adopted the *Digital Opportunity Data Collection Order and Further Notice*, which created the Digital Opportunity Data Collection, a new data collection distinct from the Form 477 that would collect fixed broadband deployment data in the form of granular coverage maps and that would include a process for accepting crowdsourced data to challenge the accuracy of the submitted data. In adopting the Digital Opportunity Data Collection, the Commission stated its intention to establish a uniform national dataset of locations where broadband could be deployed and upon which new coverage data could be overlaid. The Commission directed the Universal Service Administrative Company (USAC)—the Administrator of the USF—to develop the new data collection and crowdsourcing platforms under the oversight of the Commission's Office of Economics and Analytics (OEA) and in consultation with the Wireline Competition Bureau (WCB), the Wireless Telecommunications Bureau (WTB), and the International Bureau (IB). In the *Digital Opportunity Data Collection Order and Further Notice*, the Commission also sought comment on a number of other proposals, including: (1) additional technical standards for fixed broadband providers that could ensure greater precision for the Digital Opportunity Data Collection deployment reporting; (2) ways in which the Commission could incorporate crowdsourced and location-specific fixed broadband deployment data into the Digital Opportunity Data Collection; and (3) how the Commission could incorporate the collection of accurate, reliable mobile voice and broadband coverage data into the Digital Opportunity Data Collection.

5. In March 2020, Congress passed the Broadband DATA Act, largely ratifying the

Commission's approach to broadband mapping established in the Digital Opportunity Data Collection proceeding. The Broadband DATA Act requires the Commission to establish a semiannual collection of geographically granular broadband coverage data for use in creating coverage maps and processes for challenges to the coverage data and for accepting crowdsourced information, and it further directs the Commission to create a comprehensive database of broadband serviceable locations. Specifically, the Broadband DATA Act requires the Commission, within 180 days of its enactment, to issue rules to: (1) require the semiannual collection and dissemination of granular data relating to the availability and quality of service of fixed and mobile broadband Internet access service for use in conjunction with creating broadband coverage maps; (2) establish processes for the Commission to verify and protect the data collected; (3) establish a process for collecting verified data for use in the coverage maps from State, local, and Tribal governmental entities, from other federal agencies, and, if the Commission deems it in the public interest, from third parties; (4) establish the Fabric to serve as a foundation on which fixed broadband availability is overlaid; (5) establish a user-friendly challenge process through which the public and State, local, and Tribal governmental entities can challenge the accuracy of the coverage maps, provider availability data, or information in the Fabric; and (6) develop a process through which entities or individuals may submit specific information about the deployment and availability of broadband Internet access service in the United States on an ongoing basis. The Broadband DATA Act generally refers to this submission of data as a "crowdsourcing" process. 47 U.S.C. 644(b).

6. However, the Broadband DATA Act departs from the Commission's approach in one significant respect: it prohibits the Commission from delegating any responsibilities under the Act to USAC or from using funds collected through the USF to pay any costs associated with fulfilling them. The upshot is that the Commission could not undertake the development of costly IT and filing platforms needed to implement the requirements under the Broadband DATA Act or the Commission's rules until Congress specifically appropriated funding for that purpose, which it has recently done.

7. In July 2020, the Commission completed the required rulemaking to align the Digital Opportunity Data Collection with the requirements of the Broadband DATA Act in the *Second Order and Third Further Notice*. The Commission adopted rules regarding reporting standards for fixed and mobile services consistent with Broadband DATA Act requirements, adopted the Fabric, and established

processes for verifying the data collected from providers, including certification requirements, regular Commission audits, the acceptance of crowdsourced data, and the use of the High Cost Universal Broadband (HUBB) database. The Commission also adopted the Broadband DATA Act's enforcement standard for submitting inaccurate or incomplete data and established standards for confidential treatment of information received in the Digital Opportunity Data Collection and the Fabric.

8. In the *Second Order and Third Further Notice*, the Commission sought comment on certain remaining issues surrounding the implementation of the Digital Opportunity Data Collection, including: refining the scope of broadband Internet service providers required to file coverage data in the Digital Opportunity Data Collection; establishing speed thresholds and collecting latency data for fixed broadband services; establishing propagation modeling standards and on-the ground testing, and collecting infrastructure data, for mobile broadband service; establishing the contours of the challenge process; implementing the Fabric; establishing enforcement measures; and providing technical assistance to filers and challengers.

III. THIRD REPORT AND ORDER

9. Today we build on our earlier efforts in establishing the Digital Opportunity Data Collection. The additional measures we adopt will ensure that the data the Commission will collect through the Digital Opportunity Data Collection will be highly accurate and reliable, not only for the Commission's purposes, but for the public and federal, State, Tribal and local stakeholders. In this *Third Report and Order*, we specify that facilities-based fixed service providers are required to report broadband Internet access service coverage in the Digital Opportunity Data Collection and require these providers to identify where such services are offered to residential locations as well as where they are offered to business locations. We establish specific reporting requirements relating to speed and latency for fixed service providers and require terrestrial fixed wireless services providers to report on the coordinates of their base stations. For mobile services, we require additional information reporting concerning provider networks and propagation, which will allow the Commission to verify provider data more effectively. We also establish the requirements for challenges to fixed and mobile service coverage reporting and for challenges to the Fabric data. We establish standards for identifying locations that will be included in the Fabric, and we establish standards for enforcement of the requirements associated with

the Digital Opportunity Data Collection. With the adoption of these steps, we are well positioned to move forward with the development of the elements of the Digital Opportunity Data Collection.

A. Service Providers Subject to the Collection of Broadband Internet Access Service Data

10. We adopt our proposal to require facilities-based providers to comply with the requirements of the Digital Opportunity Data Collection. Accordingly, we revise the definition of “provider” in our rules governing the Digital Opportunity Data Collection to reflect this requirement. Specifically, an entity is a facilities-based provider of a service if it supplies the service using any of five types of facilities: (1) physical facilities that the entity owns and that terminate at the end-user premises; (2) facilities that the entity has obtained the right to use from other entities, such as dark fiber or satellite transponder capacity as part of its own network, or has obtained from other entities; (3) unbundled network element (UNE) loops, special access lines, or other leased facilities that the entity uses to complete terminations to the end-user premises; (4) wireless spectrum for which the entity holds a license or that the entity manages or has obtained the right to use via a spectrum leasing arrangement or comparable arrangement pursuant to subpart X of Part 1 of our Rules (47 CFR 1.9001-1.9080); or (5) unlicensed spectrum.

11. We adopt our tentative conclusion that the existing definition of facilities-based provider in our rules includes the categories of service providers identified in the Broadband DATA Act. In the *Second Order and Third Further Notice*, the Commission proposed that the providers subject to the requirements adopted in the *Second Order* be limited to “facilities-based providers.” Although the Broadband DATA Act states that the Commission shall collect data from “each provider of terrestrial fixed, fixed wireless, or satellite broadband,” it also requires that providers report data that documents the areas where the provider “has actually built out the broadband network infrastructure of the provider such that the provider is able to provide that service.” Reading this provision as a whole, we construe it to require reporting only by facilities-based providers. Moreover, as we noted in the *Second Order and Third Further Notice*, facilities-based providers, as compared to resellers, are in the best position to know and report such information. We further noted our expectation that resellers’ footprints would entirely overlap facilities-based providers’ service areas, reducing the additional value such data would provide

for our coverage maps. Several commenters support this approach.

12. We disagree with INCOMPAS's proposal to exempt providers using UNE loops, special access lines, or other leased facilities to provide broadband access to end users. INCOMPAS raises a number of arguments to support its position. According to INCOMPAS, the Commission's proposed definition risks overstating broadband availability which, INCOMPAS argues, Congress intended to avoid in drafting the Broadband DATA Act. INCOMPAS further argues that providers that use UNEs or special access lines purchased from an underlying provider do not have general access to these facilities and must query the underlying provider to confirm that they will be available. Consequently, it asserts that providers using leased UNEs and special access lines will only be in a position to report coverage information for existing customers, which INCOMPAS contends is highly confidential and competitively sensitive. INCOMPAS points out that the Commission has formerly accorded confidential treatment to similar information, requiring it to justify a different approach in this context. INCOMPAS also contends that collecting what is effectively customer information would conflict with the Broadband DATA Act's prohibition against requiring general reporting of coverage using lists of addresses or locations and argues that the data collected from UNE and special access purchasers will not provide the Commission with useful information because those providers are only aware of their own competitive service adoption and their reporting will not "accurately depict the full availability of the incumbents' networks." INCOMPAS also argues that the Commission should not subject providers who lease UNEs to invest in new mapping requirements given the ongoing review of the Commission's current UNE policy.

13. We disagree. While providers who lease these facilities may not build or own the entire last-mile connection to the customer, they most often add essential infrastructure, such as Digital Subscriber Line Access Multiplexers (DSLAMs), to the underlying last-mile network to connect their customers and to enable broadband service provision. We construe the Broadband DATA Act as requiring the Commission to collect, from providers who have built out network infrastructure, data showing the areas where that infrastructure makes service to locations possible. We find no conflict with the terms of the Broadband DATA Act in requiring those providers who use leased infrastructure along with their own network facilities to report coverage. Nor do we agree that this will result in an overstatement of coverage, as INCOMPAS contends.

14. On the contrary, exempting providers that lease facilities from reporting in such a situation, as INCOMPAS urges us to do, could result in an *understatement* of coverage in such situations, since the incumbent is not required to make the same service available to the end users, and where the lessee has the right to exclusive use of facilities the incumbent could not use to provide service, it would not fall within the scope of Digital Opportunity Data Collection reporting requirements. In situations where the competitive provider does not deploy any facilities, a situation in which the competitive provider would not be subject to the requirements of the Digital Opportunity Data Collection, the incumbent provider's reporting obligation will yield the same footprint as the competitor's. However, in instances where the incumbent does deploy infrastructure to complete the connection, the incumbent's footprint would not necessarily capture the competitor's footprint or capability. There are numerous possible arrangements and circumstances through which a provider can make service available at a location, including an incumbent leasing facilities to another provider while not offering its own service to end-user customers. Similarly, an incumbent may not be able to provide the same level of service as a provider that leases facilities is able to provide and thus may report different coverage data. For these reasons, we reject INCOMPAS's argument that there is insufficient value in collecting data from providers based on service using leased facilities. These services are a potentially critical element of deployment in an area, even if they may not provide the entire picture. Rather than overstating coverage, collecting coverage data from all facilities-based providers able to serve an area will help to ensure we receive accurate and comprehensive data on broadband coverage. And in any event, to the extent that providers using leased facilities to provide broadband access did not "actually buil[d] out the network," we note that nothing in the Broadband DATA Act prohibits us from collecting broadband service data from such providers, and for the reasons stated above, we believe that doing so will enhance our ability to produce maps that accurately depict the availability of broadband Internet access service in accordance with the goals of the Broadband DATA Act.

15. We are similarly not persuaded by INCOMPAS's argument that confidentiality considerations should prevail here. Those concerns seem to arise only when a provider's reporting is based exclusively on leased UNE or special access lines, such that the provider can only report existing customer locations. When a provider's reporting depicts a combination of coverage based on its own

network facilities in addition to coverage from leased facilities, the locations of its actual customers would be indistinguishable from locations of its potential customers. This will be true of filers generally, so there is little risk of competitive harm. Even in instances where a provider's service area includes only its existing customer locations, nothing in the publicly available data providers must submit regarding their service areas indicates whether they have already provisioned service at a given location or whether the provider is using its own facilities or leased facilities to do so. In such cases, however, we will nevertheless entertain requests for confidential treatment in accordance with the Commission's rules. In granting any such relief, we will aim to employ measures such as aggregation or redaction to publish the information at some form or level, rather than withholding the information from the public altogether.

B. Standards for Reporting Availability and Quality of Service Data for Fixed Broadband Internet Access Service

16. *Collecting Data on Mass-Market Services Only.* We require fixed providers to report data only on broadband Internet access services, as defined by, and consistent with, the requirements of the Broadband DATA Act. In reporting such mass-market broadband service data, we require filers to indicate whether their polygons or locations depict service that is offered to residential customers and/or whether it is offered to business customers. However, we decline to require filers to report data on non-mass market services in the Digital Opportunity Data Collection. The Broadband DATA Act calls for the collection of data on broadband Internet access services (which are, by definition, mass-market services), and we believe that expanding the scope of the Digital Opportunity Data Collection beyond that focus is not appropriate at this time.

17. In the *Second Order and Third Further Notice*, the Commission adopted the Broadband DATA Act's definition of "broadband Internet access service," which adopts by reference the meaning given to that term in 47 CFR 8.1 or any successor regulation. Section 8.1 of the Commission's rules defines broadband Internet access service as "a mass-market retail service by wire or radio that provides the capability to transmit data to and receive data from all or substantially all internet endpoints, including any capabilities that are incidental to and enable the operation of the communications service, but excluding dial-up internet access service" and "also encompasses any service that the Commission finds to be providing a functional equivalent of the service described in the previous sentence or that is used to

evade the protections set forth in [Part 8].” The Commission sought comment in the *Second Order and Third Further Notice* on requiring fixed providers reporting coverage in the Digital Opportunity Data Collection to distinguish between “residential-only” and “business-and-residential” services. The Commission also sought comment on requiring the collection of business-only broadband services, including non-mass market business broadband services.

18. The Broadband DATA Act only requires that the Commission collect availability and quality of service data on broadband Internet access services, which includes broadband Internet access service sold to businesses. Several commenters support collecting broadband coverage information distinguishing between residential and business service, rather than collecting commingled business and residential service data, as this will enable us to analyze more effectively the extent and type of deployment in an area, including by identifying areas that may only have mass-market business services available. Accordingly, we require fixed broadband service providers to indicate, for each polygon or location they submit in the Digital Opportunity Data Collection, whether the reported mass-market broadband service is available to residential customers and/or whether it is available to business customers. This represents a change from the Commission’s proposal in the *Second Order and Third Further Notice* to collect data separately on residential and on business-and-residential offerings. We find that the approach we adopt will provide us with a more complete picture of the state of broadband deployment. We disagree with commenters urging us to collect a single category of mass-market services. As USTelecom and WISPA note, collecting only one category of service could ultimately overstate residential broadband service availability, leading to the misallocation of USF support.

19. Finally, we decline to collect non-mass market broadband service data in addition to mass market service data. The Commission sought comment in the *Second Order and Third Further Notice* on whether there would be a benefit to collecting data on non-mass-market business broadband services, such as might be purchased by healthcare organizations, schools and libraries, government entities, and other enterprise customers. We agree with commenters who contend that the collection of non-mass market broadband availability data goes beyond what Congress envisioned in the Broadband DATA Act. Whatever long-term value these data might hold, we conclude it is appropriate to prioritize required data collections. As NCTA notes, the Commission has a short timeframe to implement the provisions of the

Broadband DATA Act, and we agree that the Commission should focus first on collecting the mass market broadband Internet access service data needed to fulfill our statutory requirements. Moreover, important Commission efforts to close the digital divide depend on timely development of mass-market broadband coverage maps, such as the Rural Digital Opportunity Fund Phase II auction and the recently adopted 5G Fund for Rural America. If circumstances warrant in the future, we can re-visit this issue and look at including such non-mass market data once we have more experience with the Digital Opportunity Data Collection.

20. We also acknowledge USTelecom's second objection to the reporting and publishing of non-mass market business-only broadband availability concerning the competitively sensitive nature of such data. However, we do not find such concerns relevant when reporting availability for mass-market broadband Internet access services being sold to businesses. As the comments demonstrate, USTelecom's concern is more appropriate for non-mass market business broadband services. Because we will exclusively collect data on mass-market broadband services, the arguments concerning the confidentiality of enterprise services are not relevant.

21. We disagree with ADTRAN and other commenters urging us to collect information on broadband services available to community anchor institutions or to collect business-only data for use in connection with the E-Rate and Rural Health Care programs, which typically support non-mass-market services. We note that such institutions will be included in the Digital Opportunity Data Collection's broadband availability reporting to the extent they use mass-market broadband services. We likewise disagree with the Schools, Health & Libraries Broadband Coalition that we should ignore altogether the "mass-market/non-mass-market dichotomy" or "consider all anchor institutions in the mass-market category to ensure that they are all included in the Commission's broadband maps." Merging such disparate data into a singular coverage map amplifies the risks commenters identified of undermining future universal service programs supporting broadband deployment by making it appear as if consumer broadband services are available in areas where only non-mass market services are being offered.

22. *Collecting Speed Data for Fixed Services.* We adopt our proposal for how filers must report the maximum advertised download and upload speeds associated with fixed broadband Internet access service available in an area. Specifically, for services offered at speeds below 25/3 Mbps,

providers must report the speed associated with the service using two speed tiers: one for speeds greater than 200 kbps in at least one direction and less than 10/1 Mbps, and another for speeds greater than or equal to 10/1 Mbps and less than 25/3 Mbps. For speeds greater than or equal to 25/3 Mbps, providers must report the maximum advertised download and upload speeds associated with the broadband Internet access service provided in an area. AT&T and ACT—The App Association support this approach. We agree with AT&T that this approach will allow providers to consolidate data on lower speed services, which are of less immediate value to policymaking, and allow them to focus their attention on reporting faster services that are in higher demand among consumers.

23. Some commenters argued for a different number of tiers for reporting speeds below 25/3 Mbps, while others recommended that the Commission adopt a different floor for reporting broadband service in the Digital Opportunity Data Collection. We do not believe that the speed floor for reporting in the Digital Opportunity Data Collection should be raised. Even though the Commission defines terrestrial fixed broadband services with speeds of at least 25/3 Mbps as “advanced telecommunications capability,” millions of Americans lack access to such service but live in areas where lower-speed or non-terrestrial broadband services are available. We believe it is important to understand the types of services available in these areas, how the areas and services change over time, and to distinguish them from areas of the country that have no broadband Internet access service. In addition, we believe that we should use the same speed floor used for reporting in Form 477 to maintain consistency, particularly with the subscribership reporting that will continue as part of the Form 477 data collection even after the deployment reporting is phased out.

24. Further, we believe that the two tiers proposed in the *Second Order and Third Further Notice* are appropriate to use for reporting fixed broadband service availability below 25/3 Mbps in the Digital Opportunity Data Collection. The 10/1 Mbps threshold has been important in the universal service context, as it was the minimum speed requirement adopted for Connect America Fund Phase II. Using this threshold in the Digital Opportunity Data Collection will facilitate comparing locations reported in USAC’s HUBB at 10/1 Mbps or above with locations or areas reported in the Digital Opportunity Data Collection as having the same level of service. Such a comparison was adopted in the *Second Order and Third Further Notice*, and this analysis will constitute one element of the data

verification process required by the Broadband DATA Act. In addition, being able to distinguish the availability of services offered at speeds between 10/1 Mbps and 25/3 Mbps versus at lower speeds will be important to the Commission's assessment of broadband for policymaking purposes and to the American public.

25. One commenter urges the Commission to require providers to report the speed and cost of the fastest offering in an area, as well as the speed and cost of the package with the highest number of subscribers. USTelecom and WISPA oppose such an approach, and we agree. Collecting the proposed pricing data is not immediately relevant to this proceeding's focus on broadband availability. Moreover, it would be premature to adopt such a filing requirement here because the Commission did not propose doing so in the *Second Order and Third Further Notice* and so has not had the opportunity to develop a record on the costs and benefits of collecting that information. In addition, the Commission's Urban Rate Survey collects broadband service pricing information from a random sample of 500 census tract-service provider pairs each year and produces thousands of unique pricing data points.

26. Next Century Cities also argues that the two speed tiers proposed in the *Second Order and Third Further Notice* "would not adequately account for the difference between speeds advertised versus what is actually delivered to households." We believe that the focus of the Digital Opportunity Data Collection is to provide more granular and accurate information on where broadband service, at a reported maximum speed, is available, not to address cases where the throughput a broadband customer experiences varies from the advertised speed of the service purchased. In cases where subscribers do not purchase the maximum speed offered in an area, there would be no basis for the delivered speed to match the speed reported in the Digital Opportunity Data Collection and published in the associated broadband coverage maps. In addition, as USTelecom and WISPA note, broadband providers are already required to disclose information publicly about the expected and actual speeds of their service offerings. And in any event, the Commission already collects and publishes, through its Measuring Broadband America program, empirical data on fixed broadband speeds that a representative sample of consumers receive, and these data show that delivered speeds typically meet or exceed advertised speeds.

27. *Collecting Latency Data for Fixed Services.* We conclude it is appropriate to require all providers of fixed broadband Internet access service to report latency information and to do so using the

threshold proposed in the *Second Order and Third Further Notice*. Specifically, fixed broadband service providers must indicate in their semiannual Digital Opportunity Data Collection filings whether the network round-trip latency associated with each maximum speed combination reported for a particular geographic area is less than or equal to 100 ms, based on the 95th percentile of measurements.

28. In the *Second Order and Third Further Notice*, the Commission sought comment on whether and how to collect latency information for fixed broadband services. Specifically, the Commission proposed requiring all fixed broadband service providers to report latency data by indicating whether the network round-trip latency associated with the service offered by each technology and maximum speed combination in a particular geographic area is less than or equal to 100 milliseconds (ms), based on the 95th percentile of measurements. The Commission also asked whether only providers of certain types of fixed broadband service should be required to report latency data, noting that the Broadband DATA Act states that latency information shall be collected from fixed broadband providers “if applicable” and requires that propagation model-based coverage maps submitted by fixed wireless providers reflect the “speeds and latency” of the service offered by the provider.

29. The proposal in the *Second Order and Third Further Notice* to have latency reporting be limited to an indication of whether a broadband service offered is above or below 100 ms was supported by many commenters. We adopt this proposal because we believe this information is the most relevant to the Digital Opportunity Data Collection and because this approach is simple and minimizes burdens. We are not persuaded by some commenters’ arguments that fixed broadband providers should be required to report more detailed latency data. First, because the 100 ms threshold is used in several high-cost universal service contexts, and because the data collected pursuant to the Broadband DATA Act must be used in determining new awards of high-cost universal service funding, it is logical to align the two. One hundred ms is the latency benchmark that recipients of Connect America Fund Phase II model-based support, as well as Connect America Fund Phase II auction support recipients in the Low Latency tier, are required to meet. Second, we believe the benefit to consumers of collecting actual latency figures that are less than 100 ms for services that meet the 100 ms threshold is limited. Third, the burden of collecting more granular latency information is out of proportion with its limited value. As services change in the future, we can modify the threshold(s) used for reporting latency information in the Digital Opportunity

Data Collection. Further, allowing providers to indicate whether the latency of their broadband service is above or below a certain threshold will alleviate the unnecessary burden and complexity for providers of having to develop a single latency value for each service area or served location and will eliminate the false precision that can arise from publishing such values.

30. We believe it is appropriate to collect latency data from all providers of fixed broadband Internet access service, as proposed in the *Second Order and Third Further Notice*. In addition, we disagree with USTelecom and WISPA's argument that "the Broadband DATA Act does not compel fixed broadband providers to report latency." This approach was supported by many commenters. While the Broadband DATA Act requires the Commission to collect latency information from terrestrial fixed wireless providers that submit propagation maps and propagation model data, it also gives the Commission discretion to collect latency information from other fixed broadband providers "if applicable." ACA Connects and NCTA argue that latency information should be reported only by terrestrial fixed wireless and satellite providers. We disagree and believe latency reporting should apply to all fixed providers. The benefits of having this information from all fixed providers exceeds any burden on providers of reporting it, a burden that is minimal given the mechanism adopted above for reporting latency. Collecting the information from all providers will ensure consistency across fixed technologies. It also will provide the Commission and the public with basic, but useful, information about the latency associated with the highest-speed broadband service available from each fixed provider and technology at each location across the country. This information will be especially useful in the universal service context, as it will enable the Commission to assess which locations have fixed service available below 100 ms, in addition to which locations have service available above a certain speed, when making eligibility determinations.

31. *Collecting Additional Fixed Wireless Infrastructure Data.* In the *Digital Opportunity Data Collection Order and Further Notice*, the Commission asked which factors Commission staff should consider to independently validate fixed wireless mapping, including cell-site locations. Today we require fixed wireless providers that submit propagation maps and propagation model details to submit the geographic coordinates (latitude and longitude) of each base station used to provide terrestrial fixed wireless service because such information will allow us to assess the validity of their propagation maps.

When a provider claims to provide coverage in an area, knowing whether its base stations are located within or near that area will allow us to assess whether the coverage is reasonable. Certain parties that provided comments in response to the *Digital Opportunity Data Collection and Further Notice* discussed the importance of transmission tower locations on service availability.

32. In the *Second Order and Third Further Notice*, the Commission adopted requirements for fixed wireless providers submitting propagation maps and propagation model details to also submit certain information related their base stations, including (1) the frequency band(s) used to provide service being mapped; (2) carrier aggregation information; (3) the radio technologies used on each band (e.g., 802.11ac-derived OFDM, proprietary OFDM, LTE); and (4) the elevation above ground for each base station. While this information, in combination with the other information we are collecting from fixed wireless providers, will help us verify the accuracy of these providers' coverage maps, we also find that the base station information will be much more valuable and useful if, in addition to the elevation above ground, we have the geographic coordinates of each base station. In particular, we will be able to conduct a more accurate verification of coverage with the location information than with the height, spectrum, and radio technology alone. The geographic coordinates are an important piece of the puzzle that will make other information even more useful and applicable to our coverage verification efforts.

33. We recognize that the geographic coordinates of base stations may be sensitive information that providers may wish to keep confidential for business or national security reasons. We therefore will treat such information as presumptively confidential pursuant to Section 0.457(d) of the Commission's rules.

34. *Collecting Satellite Fixed Broadband Availability Data.* In the *Second Order and Third Further Notice*, the Commission sought additional comment on how to improve the existing satellite broadband data collection to reflect more accurately current satellite broadband service availability. The Commission asked whether it should require satellite providers to provide additional demand-side reporting, including identifying the census tracts with at least one reported subscriber or where the satellite operator is actively marketing its broadband services. One satellite operator commented, arguing that "no changes are needed to the reporting of satellite broadband availability data because the Commission's current information is accurate." The satellite operator also asserts that collecting

additional information would create a burden without any benefit. With respect to the collection of demand-side data, Hughes argues that the necessity of keeping such data confidential would significantly limit its utility.

35. In the absence of concrete proposals to more reasonably represent satellite broadband deployment, we will instead, as discussed in the *Second Order and Third Further Notice*, rely on other mechanisms outlined in this *Third Report and Order*. We remind satellite providers that the standards for availability reporting that apply to all fixed services require that satellite providers include only locations that they are currently serving or meet the broadband installation standard. Satellite providers cannot report an ability to serve an area or location without a reasonable basis for claiming that deployment, taking into account current and expected locations of spot beams, capacity constraints, and other relevant factors. To help ensure a better representation of satellite broadband availability, we will rely on a number of measures to verify the accuracy of the satellite data, such as crowdsourced data checks, certifications, audits, and enforcement. We will also rely on subscriber data separately reported by satellite broadband providers in assessing the accuracy of satellite provider claims of broadband availability. For instance, although the presence of actual subscribers is not a requirement for claiming deployment in an area, the presence of subscribers above a *de minimis* level in the census tract in which the census block is located may provide a useful check on the accuracy of deployment claims.

C. Standards for Collection and Reporting of Data for Mobile Broadband Internet Access Service

36. In the *Second Order and Third Further Notice*, the Commission required that a mobile provider's propagation model results for 3G, 4G, and 5G-NR mobile broadband technologies be based on standardized parameter values for cell edge probability, cell loading, and clutter that meet or exceed certain specified minimum values. The Commission also required mobile providers to submit certain propagation model details and link budget parameters. The Commission sought comment on whether to require providers to make additional disclosures concerning the input data, assumptions, and parameter values underlying their propagation models, and on adopting additional parameters including minimum values for Reference Signal Received Power (RSRP) and Received Signal Strength Indicator (RSSI). RSRP is a standard measure of reference or synchronization signal power for 4G LTE and 5G-NR

technologies. RSSI is a measure of total power within the signal operating bandwidth for all technologies. The Commission also asked whether it should require mobile providers to submit additional coverage maps based on different speed, cell edge probability, or cell loading values.

37. We require mobile providers to submit, for each propagation map they submit, a second set of maps showing the RSSI or RSRP signal levels in the coverage areas for each technology. The Commission has recognized that RSRP or RSSI values may vary based on factors such as the spectrum band, network design, and device operating capabilities, but sought comment on whether it could establish a minimum signal strength parameter value, or range of values, to accommodate such variation. Requiring providers to disclose signal strength data will help Commission staff verify propagation model coverage predictions. Thus, for each 4G LTE or 5G-NR propagation map that a provider submits, the provider also must submit a second set of maps showing RSRP in dBm as would be measured at the industry-standard of 1.5 meters above ground level (AGL) from each active cell site. The RSRP values should be provided in 10 dB increments or finer beginning with a maximum value of -50 dBm and continuing to -120 dBm. These maps will be referred to as “heat maps” showing RSRP gradient levels as signals propagate out from the transmit antenna. This information will be made publicly available. Adopting this requirement will help the Commission verify service coverage predictions by providing a visualization of the underlying signal strength as the signal propagates. This, in turn, will enable the Commission to better ensure that consumers and policymakers have accurate information about mobile broadband coverage. The *Mobility Fund Phase II Investigation Staff Report* discussed the importance of signal strength in measuring mobile broadband performance and found a strong positive relationship between the RSRP signal strength recorded and network performance. Signal strength maps should reflect outdoor coverage only and outdoor environments should include both pedestrians using their phones and users traveling in vehicles. A second set of maps showing RSSI signal levels for each 3G propagation map a provider submits is only required in areas where 3G is the only technology the provider offers. RSRP is used in connection with 4G LTE and 5G-NR networks and not with 3G networks. Accordingly, we only require providers to show RSSI signal levels when submitting signal strength maps for their 3G services. We only require providers to submit 3G maps in areas where they do not otherwise provide 4G LTE or later generation of service. Consistent with that approach, we require

mobile service providers to submit a second set of maps depicting signal levels associated with 3G service only where 3G service is the only technology the provider offers. The Broadband DATA Act imposes requirements for mapping 4G LTE and later technologies. Given this emphasis, we do not require this data for 3G service unless 3G is the only technology a provider offers in that area. No commenters opposed this approach of requiring providers to submit a second set of maps showing RSSI or RSRP signal levels.

38. We agree with the majority of commenters that, given the variety of factors that may affect signal strength, we should not adopt a standardized minimum signal strength parameter value. For example, CTIA argues that signal strength “often fails to track actual speeds in a given geographic area.” AT&T contends that propagation maps cannot be based on standardized signal strength “and at the same time depict a provider’s delivery of a defined service speed.” Verizon argues that “[b]ecause there is no single RSRP value that is always the ‘correct’ RSRP for a given speed target, the Commission cannot standardize a minimum RSRP value.” CCA, by contrast, argues that “standardizing signal strength data can improve the reliability of the coverage data and enable better comparison of maps among carriers,” but it notes that “mobile operators calculate minimum signal strength—and, by extension, coverage—based on a large number of variables that influence their link budget.”

39. We likewise decline to adopt any other additional propagation model parameters or to require the submission of additional link budget information. In the *Second Order and Third Further Notice*, the Commission sought comment on adopting such requirements, and in particular on whether providers should submit, as part of their link budget details, a description of sites or areas in their network where drive testing or other verification mechanisms demonstrate measured deviations from the input parameter values or output values included in the link budget(s) submitted to the Commission, and a description of each deviation and its purpose. We find that there is no evidence in the record to conclude that adopting additional parameters or requiring additional link budget information will improve the Commission’s ability to understand and assess provider submissions. The Commission already requires that mobile providers’ propagation model results for 3G, 4G, and 5G-NR mobile broadband technologies be based on standardized parameter values for cell edge probability, cell loading, and clutter that meet or exceed certain specified minimum values. We also require mobile providers to submit detailed link

budget information, including all applicable link budgets used to design their networks and provide service at the defined speeds, and all parameters and parameter values included in those link budgets, a description of how the carrier developed its link budget(s) and the rationale for using specific values in the link budget(s), and the name of the creator, developer or supplier, as well as the vintage of the terrain and clutter datasets used, the specific resolution of the data, a list of clutter categories used, a description of each clutter category, and a description of the propagation loss due to clutter for each. We find that these requirements are sufficient to improve the accuracy, comparability, and reliability of the mobile broadband data the Commission collects and will help the Commission more fully understand and assess propagation model coverage predictions.

40. Finally, we decline to require mobile providers to submit additional coverage maps based on different speed, cell edge probability, or cell loading values. In the *Second Order and Third Further Notice*, the Commission asked commenters to address whether there were particular use cases or categories of subscribers, such as Machine-to-Machine or Internet-of-Things users, that might benefit from information on 4G LTE or 5G-NR service availability at speeds below the thresholds set forth in the Broadband DATA Act and adopted in the *Second Order and Third Further Notice*; or whether there are use cases for which higher thresholds for broadband speed or cell loading might make sense. Several commenters oppose requiring the submission of coverage maps based on alternative parameters. T-Mobile, for example, argues that requiring the submission of additional maps would lead to consumer confusion and impose additional burdens on providers with little benefit. We agree with commenters that having different maps based on different thresholds for coverage probability or cell loading could create consumer confusion and make it more difficult for consumers to make reasonable comparisons between mobile broadband coverage area, and we decline to adopt such a requirement.

41. The majority of commenters also oppose additional parameters or requiring the submission of additional coverage maps based on different speed, cell edge probability, or cell loading values. They argue that the requirements the Commission adopted in the *Second Order and Third Further Notice* are sufficient to meet the requirements of the Broadband DATA Act and that additional parameters and/or requirements to produce additional maps are unnecessary and could lead to consumer confusion. We agree and see limited added benefits to collecting multiple coverage maps with different

speeds, cell edge probabilities, and cell loading factors at this time, especially in light of the other steps we take to verify the accuracy of submitted propagation model data.

D. Engineering Certification of Semiannual Filings by Mobile and Fixed Service Providers

42. In the *Second Order and Third Further Notice*, the Commission adopted the Broadband DATA Act requirement that each provider must include a certification from a corporate officer as part of its semiannual coverage filing. The *Mobility Fund Phase II Investigation Staff Report* recommended that the Commission require service providers to include an engineering certification with all data submissions. And in the *Second Order and Third Further Notice*, the Commission proposed to require a certified professional engineer or corporate engineering officer certify to the accuracy of mobile service provider submissions and to require public filing of those certifications. Similarly, the Commission sought comment on whether to require an engineering certification for semiannual filings for fixed broadband service providers and on whether to establish penalties for violating the certification requirement.

43. We require each mobile and fixed service provider to submit certifications of the accuracy of its submissions by a qualified engineer. Such certifications are in addition to the corporate officer certifications required by the *Second Order and Third Further Notice*, but if a corporate officer is also an engineer and has the requisite knowledge required under the Broadband DATA Act, a provider may submit a single certification that fulfills both requirements. An engineering certification must state that the certified professional engineer or corporate engineering officer is employed by the service provider and has direct knowledge of, or responsibility for, the generation of the service provider's Digital Opportunity Data Collection coverage maps. The certified professional engineer or corporate engineering officer shall certify that he or she has examined the information contained in the submission and that, to the best of the engineer's knowledge, information, and belief, all statements of fact contained in the submission are true and correct, and in accordance with the service provider's ordinary course of network design and engineering.

44. Several commenters supported our proposal to require engineering certifications. For example, AT&T and WTA supported the Commission's proposal to require providers to submit an

engineering certification with their submissions. NTCA also generally supported the proposal, but suggested that the Commission not require providers to employ a new in-house engineer for the sole purpose of certifying data submissions and to limit the requirement to semiannual filings.

45. Others, however, argue that requiring providers to include an engineering certification would be overly burdensome and should not be adopted. We are not persuaded that an engineering certification is too burdensome or costly given the importance of ensuring the accuracy of coverage maps and that they be based on data that are consistent with professional engineering standards. The Broadband DATA Act makes clear the importance that Congress places on collecting accurate broadband deployment data, and the reporting standards the Commission has adopted for all technologies in the Digital Opportunity Data Collection will require filers to evaluate new, more stringent technical issues than have been required in reporting on FCC Form 477. We find that requiring that an engineer review and certify the accuracy of a providers' submissions is an appropriate measure to confirm that filers have in fact engaged in the analysis necessary to meet Congress's objective of developing more accurate data. Given that this analysis is already required, certifying that it has been conducted will not result in any significant additional burden for filers.

46. The Commission also sought comment on potential penalties for violating the engineering certification requirement by omitting and/or falsely certifying it. Consistent with the current Form 477 rules, the Commission will enforce compliance and assess penalties for materially inaccurate or incomplete Digital Opportunity Data Collection filings, including failure to file the required corporate officer and engineering certifications.

E. Verifying Broadband Availability Data Submitted by Providers

47. The Broadband DATA Act requires the Commission to verify the accuracy and reliability of the broadband coverage data that providers submit to the Commission. In carrying out this requirement, we adopt provisions to ensure that the coverage data in the Digital Opportunity Data Collection are as credible and reliable as possible. The Office of Economics and Analytics (OEA) and WTB may request and collect the data on a case-by-case basis only where staff have a credible basis for verifying the provider's coverage data. In response to such verification requests, mobile service providers must submit either infrastructure information or on-the-ground test data for where the provider claims to

provide coverage. In addition to submitting either infrastructure or on-the-ground test data, the provider may submit additional data that the provider believes support its coverage, such as data collected from its transmitter monitoring systems and software. At the time of the adoption of this Order, we define on-the-ground test data as drive test data. OEA, however, may determine in the future that there are other types of on-the-ground test data that are sufficient to substitute for drive test data. Mobile providers urge the Commission to provide flexibility in the types of data that can be submitted for verification purposes. Several commenters suggest that we permit providers to submit data collected from their network monitoring systems and software in response to a verification request. We find that the record does not support a finding that such data currently are sufficient to permit such data to substitute for requiring either on-the-ground testing or infrastructure data in response to a verification investigation. However, we direct OEA and WTB to review such data to the extent they are voluntarily submitted by providers or in response to verification investigations or to requests from staff. To the extent staff concludes that such methods are sufficiently reliable, we direct OEA and WTB to specify appropriate standards and specifications for such data and add it to the alternatives available to providers to respond to verification investigations. In so directing OEA and WTB to make such a determination, we specifically recognize that such an analysis may lead it to expand the options available to providers for responses with respect to verification investigations but not do so for other purposes, including responses to consumer challenges and/or governmental and other entity challenges. Although a provider may choose to submit either infrastructure or on-the-ground data in a response to a verification inquiry, OEA and WTB are authorized to require the submission of additional data if it finds such data would assist the Commission in verifying coverage in a particular area where the infrastructure or on-the-ground data submitted by the provider is insufficient to verify the coverage shown on the provider's map.

48. We direct OEA and WTB to implement this data collection and to adopt the methodologies, data specifications, and formatting requirements that providers shall follow when collecting and reporting mobile infrastructure and on-the-ground test data to the Commission. We direct OEA and WTB to provide guidance about what types of data will likely be more probative in different circumstances. We find that directing OEA and WTB to adopt the methodologies, specifications, and formatting information will provide greater flexibility to adjust and improve our collection process over

time once the Commission has had an opportunity to review the data submitted by mobile service providers and to begin the verification process required under the Broadband DATA Act.

49. Second, we adopt standards for collecting verified broadband data from State, local, and Tribal mapping entities and third parties that meet certain criteria. Specifically, we establish details associated with the meaning of “verified” data, how to reconcile conflicts between these data and data in semiannual provider filings, collecting verified data for mobile service, and the parameters of the Commission’s public interest determination to use broadband data from third parties.

1. Verifying Mobile Data

50. In response to a Commission staff inquiry to verify a mobile service provider’s coverage data, we require on a case-by-case basis that the provider submit either infrastructure information or on-the-ground test data for where the provider claims to provide coverage. A provider has the option of submitting additional data, including but not limited to on-the-ground data or infrastructure data (to the extent such data are not the primary option chosen by the provider), or other types of data that the provider believes support its coverage. The mobile provider has 60 days from the time of the request by OEA and WTB to submit, at the provider’s option, infrastructure or on-the-ground data and any additional data that the provider chooses to submit to support its coverage. OEA and WTB may require submission of additional data (e.g., on-the-ground test data if the provider initially submitted infrastructure data) if such data are needed to complete its verification inquiry. Should OEA and WTB require further data from the provider, the provider shall submit such data no later than 60 days from the time of that request.

51. *Collecting Infrastructure Information from Mobile Providers.* The Broadband DATA Act requires that the Commission establish “processes through which the Commission can verify the accuracy of data” that mobile providers submit. In the *Second Order and Third Further Notice*, the Commission reiterated that infrastructure data could advance that requirement under the Broadband DATA Act and stated that such information could help Commission staff verify the accuracy of provider coverage propagation models and maps submitted by mobile providers. The *Second Order and Third Further Notice* sought to refresh the record and requested further comment on collecting infrastructure information from mobile wireless service providers as part of the Digital Opportunity Data Collection. In

particular, the Commission sought comment on whether to collect infrastructure data, what information to collect, how often to collect it, and whether to collect it on a regular basis or only on staff request. In seeking comment on these issues, the Commission recognized that such collection of infrastructure data could raise commercial sensitivity and national security concerns.

52. In light of the Broadband DATA Act requirements and our review and analysis of the record (including the *Mobility Fund Phase II Investigation Staff Report*), we find that infrastructure information can provide an important means for the Commission to fulfill its obligation to independently verify the accuracy of provider coverage propagation models and maps. Examples of infrastructure information that mobile providers may be required to submit as part of a verification inquiry include the following: (1) the latitude and longitude of cell sites; (2) the site ID number for each cell site; (3) the ground elevation above mean sea level (AMSL) of the site (in meters); (4) frequency band(s) used to provide service for each site being mapped including channel bandwidth (in megahertz); (5) the radio technologies used on each band for each site; (6) the capacity (Mbps) and type of backhaul used at each cell site; (7) the number of sectors at each cell site; and (8) the Effective Isotropic Radiated Power (EIRP, in dBm) of the sector at the time the mobile provider creates its map of the coverage data. For example, 802.11ac-derived OFDM, proprietary OFDM, LTE Release 13, and NR Release 15. In response to the Commission's requests for comment in the *Digital Opportunity Data Collection Order and Further Notice*, CTIA and AT&T supported requiring mobile providers to submit these first five types of infrastructure information. We define "backhaul capacity" as the connection capacity from the radio site to the network. Mobile providers submitting infrastructure information must do so within 60 days of receiving a request from Commission staff. In the *Digital Opportunity Data Collection Order and Further Notice*, the Commission sought comment on its proposal to require that a provider submit its infrastructure information within 30 days of a Commission request. In response to this proposal, certain providers asserted that the Commission require more than 30 days to respond to a Commission request.

53. We agree with the conclusion in the *Mobility Fund Phase II Investigation Staff Report* that infrastructure information can be used to verify mobile broadband coverage. In the *Mobility Fund Phase II Investigation Staff Report*, staff recommended that detailed information on propagation model parameters and deployed infrastructure needed to be collected in order to verify fully the engineering

assumptions inherent in mobile coverage maps created using propagation modeling. We further conclude that collecting such data will enable the Commission to satisfy the Broadband DATA Act's requirement that the Commission verify the accuracy and reliability of submitted coverage data.

54. Several commenters support the Commission's collection of infrastructure information from mobile providers on a case-by-case basis for particular purposes. The City of New York, however, asserts that the Commission should require that mobile providers submit infrastructure information on a regular basis. The Massachusetts Department of Telecommunications and Cable (MDTC) contends that collecting mobile infrastructure data is critical to analyzing whether areas have adequate mobile broadband access. T-Mobile and CTIA assert that, if there is an issue regarding a mobile provider's coverage data that was identified in the challenge process or by other verification tools, the Commission could request targeted infrastructure information, such as cell site locations. Verizon contends that speed test data and infrastructure data should be used for case-by-case verification in small areas when other verification methods have identified a potential issue, such as when crowdsourced data or a third-party challenge has indicated a potential problem with the coverage map's accuracy. AT&T argues that the Commission should consider collecting either the propagation model calibration report statistics for each propagation map submitted to the Commission or the five specific types of infrastructure data. Verizon asserts that the Commission could give the mobile service provider the option of providing infrastructure data or speed test data to verify the accuracy of its map.

55. In the *Second Order and Third Further Notice*, the Commission recognized that the collection of mobile network infrastructure information could raise commercial sensitivity and national security concerns. In response to the Commission's request for comment, several commenters agree and assert that the disclosure of infrastructure information could lead to competitive harm to mobile service providers and could compromise the security of providers' cell sites. In particular, Verizon argues that infrastructure data is commercially sensitive because it reveals the design of a provider's network. Verizon also asserts that the risk of disclosing a complete database of a provider's network infrastructure raises significant national security concerns because it could give hostile actors a roadmap to the nation's critical communications infrastructure. We are sensitive to those confidentiality and security concerns and will therefore treat all of the mobile infrastructure information submitted by providers at the request

of Commission staff, including the location of cell sites, as presumptively confidential.

56. Certain commenters express concern that producing mobile network infrastructure data could be unduly burdensome. To avoid imposing excessive burdens, we do not mandate submission of such data in response to every Commission verification inquiry. Instead, mobile service providers, in the alternative, may submit on-the-ground testing data to support their coverage maps in response to staff verification requests. These test data provide another means by which the Commission can undertake its verification responsibilities. Thus, providers may choose whether to submit infrastructure information or on-the-ground test data based on the responding provider's evaluation of which type of submission will be the most probative and least burdensome. The requirement to submit either infrastructure information or on-the-ground test data constitutes a critical element of our ability to verify provider coverage data.

57. *Collecting On-the-Ground Test Data from Mobile Providers.* In the *Second Order and Third Further Notice*, the Commission proposed requiring mobile providers to submit on-the-ground test data (i.e., both mobile and stationary drive-test data) as another means to verify mobile providers' coverage maps, and specifically proposed collecting a statistically valid sample of on-the-ground data. The Commission sought comment on ways to develop a statistically valid methodology for the submission and collection of such data as well as how to implement such a requirement in a way that is not cost prohibitive for providers, particularly for small service providers. Further, in the *Second Order and Third Further Notice*, the Commission requested comment on whether Commission staff should develop a statistically valid methodology that would be used for determining the locations and frequency for on-the-ground testing as well as the technical parameters for standardizing on-the-ground data.

58. Commenters agree on the verification requirements of the Broadband DATA Act but disagree on the most appropriate mechanisms for verifying mobile coverage. The majority of commenters oppose requiring on-the-ground testing as part of a verification process. Opponents assert that on-the-ground testing would be enormously expensive. Service providers argue that the Commission should refrain from mandating on-the-ground testing and instead review carrier submissions and request additional documentation from a service provider to clarify any perceived issue. In contrast, the Vermont Department of Public Service (VTDPS) argues that the collection of on-the-ground test data from providers is a critical component of the verification process and is consistent with the Broadband DATA

Act. We agree with VTDPS that on-the-ground test data can be a valuable method for verification. We find, however, there must be an appropriate balance between verifying coverage and recognizing the challenges of on-the-ground testing in various geographic areas. We find that the case-by-case approach we adopt here preserves the Commission's ability to use on-the-ground data for verification while reducing the burdens associated with requiring submission of on-the-ground data on a regular basis. On-the-ground testing and infrastructure data generally provide valuable methods for verifying coverage data. However, neither may be conclusive in certain cases particularly in rural areas with challenging terrain; thus, we preserve the opportunity to request additional data. We agree with those commenters that argue that a flexible approach is needed and find that a case-by-case approach appropriately balances the need to verify coverage and the cost of doing so. Thus, similar to the collection of infrastructure data described above, we adopt a framework for the collection of on-the-ground data from mobile service providers that submit on-the-ground test data in response to a request by Commission staff for verification data. Connected Nation argues that the Commission should require mobile service providers to submit on-the-ground test data representing a combination of mobile and stationary tests. Like infrastructure data, we find that on-the-ground testing can provide an effective means for the Commission to investigate the accuracy of the mobile broadband coverage maps submitted to the Commission.

59. In the *Second Order and Third Further Notice*, the Commission sought comment on how to ensure that providers submit a statistically valid and unbiased sample of on-the-ground tests. We agree with commenters that argue that the process of establishing a statistically valid sample may differ from carrier to carrier and that there should be some flexibility in the Commission's determination of an appropriate location for statistical sampling. AT&T asserts that the *Second Order and Third Further Notice* lacks guidance as to what is meant by the "area tested," argues that this is susceptible to many possible interpretations, and notes the difficulty in creating statistically valid samples for particular geographic areas given the variability of the terrain across the nation. CCA argues that a statistically significant sample should account for variations in terrain, foliage, and potentially clutter. We therefore direct OEA, WTB, and OET to develop and administer the specific requirements and methodologies that providers must use in conducting on-the-ground-tests, including the geographic areas that must be subject to the on-the-ground testing so that the tested areas satisfy the requirements of a statistically valid and

unbiased sample of the provider's network. Additionally, we direct OEA, WTB, and OET to approve the equipment that providers may use, including the handsets and any other special equipment necessary for the testing and other parameters necessary to obtain a statistical sample of the network. In eliminating the requirement to submit separate Form 477 coverage maps by spectrum band, the Commission acknowledged that it had not yet used such data to analyze deployment in different spectrum bands and that such data were unnecessary to confirm buildout requirements or to determine deployment speeds, as such information was typically provided by mobile providers through other means. For on-the-ground test data, however, spectrum band data are essential to understanding and analyzing mobile providers' on-the-ground submissions, including measurement data and network performance, because signal strength values may vary based on the particular band in use. Further, we direct OEA, WTB, and OET to take into account the lessons learned from *Mobility Fund Phase II Investigation Staff Report* when it specifies the on-the-ground testing requirements. Further, we direct that OEA, WTB, and OET approve the number and location of the mobile and stationary tests required to accurately verify the coverage speed maps.

60. A mobile provider submitting on-the-ground test data in response to a Commission staff verification request shall submit such data within 60 days of receiving the request. As with the submission of infrastructure data, we find that 60 days is an appropriate time period for providers to submit on-the-ground test data. This time period will also ensure a speedy resolution of the verification process and consistency with the challenge process. In the *Second Order and Third Further Notice*, the Commission also requested comment on whether it should treat on-the-ground test data as confidential. We agree with commenters that publicly available on-the-ground test data is in the public interest because it ensures that the most accurate data are collected and reported and ultimately benefit consumers.

2. Collecting Verified Data from Government Entities and Third Parties

61. The Broadband DATA Act requires the Commission to develop a process through which it can collect verified data for use in the coverage maps from: (1) State, local, and Tribal governmental entities primarily responsible for mapping or tracking broadband Internet access service coverage in their areas; (2) third parties, if the Commission determines it is in the public interest to use their data in the development of the coverage maps or in the verification of data submitted by providers; and (3) other federal agencies. In the *Second Order and Third Further Notice*, the Commission adopted this

requirement and directed the Bureaus and Offices to implement the details of the process. The Commission stated that it will treat such data as “primary” availability data “for use in the coverage maps” on par with the availability data submitted by providers in their semiannual Digital Opportunity Data Collection filings. We disagree with Connected Nation’s objection to our treatment of such data as “primary source data.” We note that, contrary to Connected Nation’s contention, Congress directed the Commission to “develop a process through which the Commission can collect *verified data for use in the coverage maps.*” The Commission sought comment in the *Second Order and Third Further Notice* on other details associated with the process, including the meaning of “verified” data, how to reconcile conflicts between these data and data in semiannual provider filings, collecting verified data for mobile service, and the parameters of the Commission’s public interest determination to use broadband data from third parties.

62. First, we conclude that coverage data from these government entities and third parties will be verified for purposes of incorporating into coverage map data when they bear certain indicia of credibility. Regarding fixed broadband coverage data submitted by government entities and third parties, we agree with USTelecom that (once complete) the location data in the Fabric will become the standard for evaluating the credibility of such data. Specifically, we evaluate the credibility of such data by analyzing the source of the data and the steps that the submitter took to gather and verify the data: (1) are the data submitted by an entity that specializes in gathering and/or analyzing broadband availability data; and (2) is the submitter able to demonstrate that it (or the entity acting on its behalf) has employed a sound and reliable methodology in collecting, organizing, and verifying the availability data it is submitting. We will not accept broadband coverage data that are submitted by government entities and third parties that do not meet these parameters.

63. To the extent they choose to file verified data, government entities and third parties must file their broadband availability data in the same portal and under the same parameters as providers (e.g., formatting requirements, required information, certifications). We note the concern of the Illinois Office of Broadband that the Commission not require state, local, or Tribal entities to submit or verify broadband availability data according to any particular schedule. While we are not requiring government entities to submit broadband availability data at every semiannual deadline required for providers to submit their

data, to the extent such entities do have data to submit, they must do it by one of the semiannual filing deadlines. We also agree with NCTA that, to be relevant, the timeframes of the third-party verified data should match the timeframes of the data submitted by providers “or new broadband deployments will not be represented.” For example, government entities and third parties must generate availability data as a fixed broadband availability polygon, mobile propagation map, or list of locations depending on whether the data concern terrestrial wired, satellite, fixed wireless, or mobile service. In addition, submitters must disclose the methodologies they used to produce their data. We disagree with NCTA’s request that “[d]ata based on large geographic areas, such as statewide data, must include all broadband providers in the relevant area to be informative.” The Broadband DATA Act has no such limitation; we find instead that the Act requires the Commission to establish a process to encourage the submission of verified third-party broadband data, and we refrain from reading the limitation proposed by NCTA into the Act.

64. We will not accept data that government and third-party entities have simply collected directly from providers and are passing along to us without any attempt to verify the data. We note the concern of the Illinois Office of Broadband that, while a governmental agency may collect broadband availability data itself using its own personnel and resources, more commonly “the data are likely to be gathered by a reputable contractor pursuant to a valid contract with a state, local, or Tribal government [entity].” The Illinois Office of Broadband asserts that “[w]hile such data are highly likely to be reliable, the governmental entity itself is unlikely to have the direct personal knowledge of the contractor’s data gathering and verification process that would be necessary to support an attestation.” According to the Illinois Office of Broadband, “[i]n such cases, no attestation should be required from the governmental entity submitting the data or, in the alternative, any attestation should be limited to the fact that the data were gathered pursuant to a valid contract with a governmental entity, and that the governmental entity submitting the data has no cause to question their reliability.” We disagree. We find that a certification requirement for such entities akin to that required of providers under section 802(b)(4) of the Broadband DATA Act will help ensure the reliability of the data. Where government entities rely on third parties (e.g., consultants, commercial entities, and the like) to collect broadband availability data for them, the government entities can supplement their certifications by describing the third party providing the data (e.g., does it specialize in gathering and/or analyzing broadband availability data) as well as the

methodology the third party employed in collecting, organizing, and verifying the availability data provided.

65. We will publish the verified availability data collected from government entities and third parties as a layer on the relevant coverage maps. In addition, we require service providers to review the verified data submitted in the online portal, work with the submitter to resolve any coverage discrepancies, make any corrections they deem necessary based on such review, and submit any updated data to the Commission within 60 days after being notified by the online portal that data has been submitted by the government entity or third party. However, we disagree with Connected Nation that any corrections made to the public-facing maps “should be as a result of FCC-directed validation/verification efforts—not as a result of any resolution or reconciliation process between submitting entities and the service providers themselves. We believe such a process would be cumbersome, and would actually discourage third-party entities from submitting data.” While some corrections to the broadband coverage maps could be made as a result of Commission-directed validation efforts arising from the analysis of government or third-party data, we believe that a review and potential reconciliation of data between providers and third-party/government submitters will help improve the accuracy of the public-facing coverage maps without imposing undue additional burdens on submitters. We find that 60 days is an appropriate time for providers to review government and third-party data, work with the submitter, and determine whether any updates must be made to their existing broadband availability data. This time period mirrors the timing for providers to respond to challenges. As we note in adopting the challenge process, permitting 60 days for provider action will help ensure that the process is manageable for providers while also providing for speedy resolution of any discrepancies.

66. If the provider does not agree with the data submitted by the government entity or third party, then the provider need not include such data as part of its broadband data submissions and the data will not be reflected in the broadband coverage maps. If a government entity or third party does not agree with the provider’s treatment of the data, they have the option of filing the data as part of a challenge to the provider’s availability data via the challenge portal. Such challenges will be addressed via the respective fixed and mobile challenge process procedures.

67. *Collecting Verified Data on Mobile Service from Government Entities and Third Parties.*

The *Second Order and Third Further Notice* sought comment on how to collect voluntarily-submitted verified on-the-ground data on mobile service from state, local, and Tribal governmental entities, third parties, and Federal agencies for use in the mobile coverage maps the Commission will create. The Commission also sought comment on a pilot program to collect information to verify mobile providers' coverage data to meet the Broadband DATA Act's mandate of establishing a process that tests the feasibility of partnering with Federal agencies that operate delivery fleet vehicles, including the United States Postal Service (USPS). Section 644(b)(2)(B) of the Broadband DATA Act requires the Commission, within one year of the Act's enactment, to "conclude a process that tests the feasibility of partnering with Federal agencies that operate delivery fleet vehicles, including the United States Postal Service, to facilitate the collection and submission" of data that can be used to verify and supplement broadband coverage information.

68. Consistent with the Commission's obligations under the Broadband DATA Act, we direct OEA to collect verified mobile on-the-ground data through a process similar to the one established for providers making their semiannual Digital Opportunity Data Collection filings. If a government entity or third party chooses to submit mobile verified data, we require it to submit such data, as set forth above, through the same online portal created for providers making their semiannual Digital Opportunity Data Collection filings. In submitting these data, the government entity or third party should include a description of relevant methodologies, specifications, and other relevant details that the Commission should consider in reviewing these verified mobile data. We also require government entities and third parties submitting verified mobile data to certify that the information it is submitting is true and accurate to the best of their actual knowledge, information, and belief.

69. We direct OEA and WTB to investigate a pilot program that tests the feasibility of partnering with the USPS or other federal agencies to collect information to verify and supplement broadband information submitted by mobile providers. With Congress's recent appropriation of funding for the Commission to implement the Broadband DATA Act, we will consider appropriate steps to initiate such a pilot program with the USPS or another federal agency to collect information to verify and supplement the broadband data submitted by mobile providers. Connected Nation supports the Commission's proposal to move forward with a pilot program with the USPS and urges the Commission

to focus primarily on rural areas for purposes of the feasibility study.

F. Fixed Service Challenge Process

70. The Broadband DATA Act requires the Commission to adopt a user-friendly challenge process through which consumers, State, local, and Tribal governmental entities, and other entities or individuals may submit challenges to the accuracy of the coverage maps, broadband availability information submitted by providers, or information included in the Fabric. This requirement aligns with the Commission’s recognition in the *Digital Opportunity Data Collection Order and Further Notice* that “input from the people who live and work in the areas that a service provider purports to serve also plays a vital role in ensuring the quality of these maps, helping to identify areas where the data submitted do not align with the reality on the ground.” In adopting the challenge process, the Commission must take into consideration: (1) the types and granularity of information to be provided in a challenge; (2) the need to mitigate time and expense in submitting or responding to a challenge; (3) the costs to consumers and providers from misallocating funds based on outdated or inaccurate information in coverage maps; (4) lessons learned from comments submitted in the Mobility Fund Phase II challenge process; and (5) the need for user-friendly submission formats to promote participation in the process. The process also must include the verification of data submitted through the challenge process and allow providers to respond to challenges to their data. Also, pursuant to the Broadband DATA Act, the Commission must develop an online mechanism for submitting challenges that is integrated into the coverage maps, allows an eligible entity or individual to submit a challenge, makes challenge data available in both GIS and non-GIS formats, and clearly identifies broadband availability and speeds as reported by providers. The rules establishing the challenge process also must include processes for the speedy resolution of challenges and for updating the Commission’s coverage maps and data as challenges are resolved.

71. In the *Second Order and Third Further Notice*, we proposed to make the online mechanism for receiving and tracking challenges accessible through the same portal proposed for accepting crowdsourced submissions. We also proposed that the system provide easy, direct access to the challenge data as well as broadband availability data. Several commenters support this approach and no commenters opposed it. We find that establishing a single platform for submitting challenges and crowdsourced information that clearly delineates between the two functions will promote access and

reduce the potential for confusion by users. We therefore adopt this approach.

1. Consumer Challenges to Fixed Broadband Internet Access Service and Fabric Data

72. *Challenges to Service Availability and Coverage Map Data.* We adopt the proposal regarding the collection of information from consumers seeking to challenge coverage map data or the availability of service at a particular location. Specifically, we require consumers submitting such a challenge to include: (1) the name and contact information of the challenger (e.g., address, phone number, and/or e-mail address); (2) the street address or geographic coordinates (latitude/longitude) of the location(s) at which the consumer is disputing the availability of broadband Internet access service; (3) a representation that the challenger owns or resides at the location being disputed or is otherwise authorized to request service there; (4) the name of the provider whose coverage is being disputed; (5) the category of dispute, chosen from pre-approved options in the online portal—e.g., whether the challenge asserts there is no service offering at location, the provider failed to install a functioning service within ten business days of valid order for service, the provider denied the request for service, reported speed not offered; (6) for customers or potential customers challenging availability data or the coverage maps, text and documentary evidence and details of a request for service (or attempted request for service), including the date, method, and content of the request and details of the response from the provider, while for non-customers challenging availability or the coverage maps, evidence showing no availability at the disputed location (e.g., screen shot, e-mails); and (7) a certification from an individual, or an authorized officer or signatory if an entity, that the person examined the information contained in the challenge and that, to the best of the person’s actual knowledge, information, and belief, all statements of fact contained in the submission are true and correct, including certifying to each challenge location if there are challenges to multiple locations at once. The challenge process proposed for fixed service availability and coverage map data is designed to allow consumers and other parties to challenge whether coverage maps accurately reflect the *availability* of broadband service from a particular provider using the technology and at the maximum advertised speeds reported by the provider. This challenge process is not meant to address disputes that subscribers have with their broadband provider about quality of service issues, such as network performance experienced at a particular location. When collecting, storing, using, or

disseminating personally identifiable information in connection with the challenge process described here, the Commission will comply with the requirements of the Privacy Act of 1974, 5 U.S.C. 552(a).

73. Commenters generally expressed support for requiring consumers to submit this information when seeking to challenge coverage map data or availability of service. Commenters also support the Commission's adoption of its proposal to require that challengers certify in their filings that all statements of fact contained in the submission are true and correct. We moreover agree with commenters arguing that all fields of requested information must be completely filled in for a challenge to be considered complete and for a provider to be required to respond and will accordingly make this a feature of the challenge portal.

74. While some commenters express concerns regarding the amount of information consumers will need to submit and the risk of creating a burdensome process for consumer challenges, we find that collecting the required information will promote fairness in the challenge process by ensuring that providers receive information necessary to identify each challenged location and the basis for each challenge. We conclude that collecting this information would appropriately balance the respective burdens on challengers and providers, facilitate challenge participation, and enable us to adequately verify the information collected, as required by the Broadband DATA Act. We also find that this process will appropriately inhibit the submission of frivolous or malicious filings. We note that in the *Digital Opportunity Data Collection Order and Further Notice*, we directed USAC to develop mechanisms in the Digital Opportunity Data Collection to prevent malicious or unreliable filings.

75. We also adopt the proposal from the *Second Order and Third Further Notice* that, once a challenge is submitted to the Commission's online portal, the portal should automatically notify a provider that a challenge has been filed against it. Commenters do not oppose this proposal. Accordingly, we find that sending an automatic notification to providers would promote active engagement, awareness, and responsiveness by providers as well as comply with the Broadband DATA Act, which requires the Commission to allow providers to respond.

76. Several commenters express concerns regarding the pre-established options proposed for consumer challenges in the *Second Order and Third Further Notice* and identified here. We first address NCTA's request that the Commission clarify the category of "reported speed not available" that "speed

test results alone are not sufficient to warrant the submission of a challenge.” In support of its request, NCTA explains that “a consumer should have to provide other evidence to support the claim that the speed reported by the broadband service provider is not available at that location” such as “documentation demonstrating that the customer attempted to subscribe to the service speed reported by the provider and was unable to do so.” We acknowledge NCTA’s concerns and clarify that the challenge process is intended to shed light on whether the reported speed is actually offered in the marketplace. We otherwise find that the identified categories of disputes will allow consumers an efficient way to assert a variety of disputes and that collecting such data is necessary to comply with the Broadband DATA Act’s requirement that we verify the accuracy and reliability of submitted coverage data.

77. Second, USTelecom and others assert that the categories of dispute options are overly broad and may result in unfounded challenges. In particular, these commenters argue that the categories “provider failed to install within 10 days of a valid order” and “installation attempted but unsuccessful” could result in unfounded challenges unrelated to availability. According to USTelecom, “while a provider’s inability to offer service within ten business days is a denial of service, a delay in installation due to scheduling or other unforeseen circumstances that results ultimately in installation outside the ten-day window is not a denial of service.” USTelecom argues that “unforeseen circumstances can delay installation beyond 10 days but wouldn’t show an inability to provide service.” USTelecom and WISPA also argue that an “unsuccessful installation” could be the result of extenuating circumstances, outside of the control of the provider and should not be an option for challengers to assert. WTA similarly argues that “provider failed to install within 10 business days” and “installation(s) attempted but unsuccessful” are not clearly and wholly related to service availability, and can involve “lack of customer cooperation, inadequacy of customer premises equipment, and weather disruptions.” WTA also asserts that these categories “are better and more appropriately” addressed through the Commission’s informal section 208 complaint process. Section 208 complaints against common carriers related to rates, terms, and conditions can be filed in an informal and formal complaint process, but that process is separate from, and not applicable to, the challenge process—a statutory requirement under the Broadband DATA Act.

78. We disagree. The Broadband DATA Act specifically requires the Commission to develop a challenge process through which consumers can challenge the accuracy of the coverage maps,

broadband availability information submitted by providers, or information included in the Fabric. Indeed, the ability to install service within 10 business days of a customer request is a fundamental component of reporting availability for purposes of the Digital Opportunity Data Collection, and consumers naturally must have the opportunity to challenge assertions of coverage on that basis. It is because of such categories that we can ensure “input from the people who live and work in the areas that a service provider purports to serve also plays a vital role in ensuring the quality of these maps, helping to identify areas where the data submitted do not align with the reality on the ground.”

79. We recognize that there may be instances in which it is not possible for a provider to meet the 10 business-day standard for reasons beyond its control, but in those cases, a provider will have an opportunity to submit facts to demonstrate that that was, or continues to be, the case. Additionally, we will ask challengers, in initiating a challenge, to report on whether the provider has initiated service at their location after initially failing to do so within 10 business days. Where the information submitted by the parties to the challenge shows coverage has been initiated, we will not remove the location from reported coverage in the broadband maps, but information about the extent to which locations reported as covered are not served within 10 business days, and the reasons therefor, will be useful in assessing the coverage data generally and possibly with regard to providers individually.

80. *Dispute Resolution.* We adopt the proposal for a multi-step dispute resolution process, with certain slight modifications. Specifically, upon the filing of a challenge containing all required elements, we will designate the subject location in the public coverage maps as “in dispute/pending resolution” until the challenge is resolved. This departs from the proposal to designate a location as “in dispute/pending resolution” in the public maps once the affected provider submitted an objection to the challenge. We find that making this designation when the challenge is made will better reflect the status of the coverage data in the map rather than waiting for a provider’s response to make such a designation, and give due weight to the fact that the challenger has certified to all requisite information to lodge a challenge.

81. In the *Second Order and Third Further Notice*, the Commission sought comment on its proposal to require a provider to submit a reply to a challenge in the online portal within 30 days of being notified of the challenge. The Commission also sought comment on its proposal that a provider’s failure

to submit a reply within the required period would result in the subsequent removal of the location from the Commission’s official coverage map, and the Commission sought comment on any alternative approaches. Connected2Fiber and NRECA propose that the Commission adopt a 30-day response time for providers, and NRECA also argues for the adoption of a “sliding scale” response time that would allow more time for a provider to respond when a challenge “covers more locations.” The record, however, overwhelmingly supports NTCA’s proposal for a 60-day reply period for providers. For example, ACA Connects agrees with USTelecom and NTCA that “a 30-day response deadline would place significant burdens on providers, particularly smaller providers that lack the personnel and resources to dedicate to handling DODC challenges.” Connected Nation, while it agrees with the 30-day reply period, similarly expresses concern “with the burden that such a requirement would place on service providers—particularly small providers—and the Commission itself, and that such a process may be overly cumbersome.”

82. We agree with commenters that the challenge process is likely to result a large volume of data to analyze and that permitting 60 days to respond to a challenge, rather than the proposed 30 days, balances the need to ensure that the challenge process is manageable for providers, while also providing for prompt resolution of challenges. We therefore adopt this approach. We decline to adopt a sliding-scale approach, finding that this would add unnecessary complexity to the process and could result in confusion to challengers and providers as to which deadlines applied.

83. We also adopt the following substantive requirements for providers’ replies to availability or coverage map challenges. Specifically, a provider must reply by either: (1) accepting the assertions raised by the challenger, in which case the provider must submit a correction for the challenged location in the online portal within 30 days of its portal reply; or (2) denying the challenger’s assertions, in which the case the provider must provide evidence in its reply that the provider serves, or could and is willing to serve, the challenged location. To the extent a provider has several corrections to be made to its broadband availability data, it can batch them together, but any correction must meet the 30-day deadline.

84. In the case where a provider disagrees with the challenger’s assertions, the provider will have 60 days from the date of its reply in the online portal to resolve the dispute with the challenger. If

the parties are unable to reach consensus within that time, the provider must report the outcome of efforts to resolve the dispute through the online portal, after which Commission staff will review the evidence and make a determination of whether the provider has demonstrated it is offering service at that location. The service provider must demonstrate to Commission staff that by the preponderance of the evidence, it in fact offers service at that location consistent with the requirements of the Digital Opportunity Data Collection. When staff find in favor of the challenger, the provider must remove the specified location from its coverage polygon or customer list within 30 days of the decision. When staff find in favor of the service provider, the location will no longer be subject to the “in dispute/pending resolution” designation on the coverage maps.

85. A provider’s failure to timely respond to a challenge will result in a finding for the challenger and mandatory corrections to the provider’s Digital Opportunity Data Collection information as requested by the challenger. Providers must submit any such corrections within 30 days of the missed reply deadline or the Commission will make the corrections on its own.

86. We adopt the proposal to use the “preponderance-of-the-evidence” standard in resolving disputes between consumer challengers and providers, with the challenger required to demonstrate initially facts indicating that a location is most likely unserved. The challenger makes its initial showing by submitted a completed, certified challenge in the online portal. After this initial showing, the burden will shift to the provider to rebut the challenge by a preponderance of the evidence. In the *Second Order and Third Further Notice*, the Commission explained that based on a preponderance-of-evidence evidentiary standard, the Commission would weigh whether the service provider has subsequently shown by the greater weight of the evidence that it makes service available at the challenger’s location.

87. A number of commenters argue either that the Commission should adopt a “clear and convincing” evidentiary standard or that the burden of proof should be on the challenger at all times, or both. USTelecom and WISPA, in addition to these measures, argue that “a provider should be entitled to a presumption that its data is accurate (or more so) than the challenger, especially where it is subject to enforcement sanctions as the regulated entity.” We find that adopting a heightened burden of proof would place too high of a burden on consumers in making and prosecuting challenges and would be contrary to Congress’s intent that the challenge process be “consumer friendly.” In particular, we find

that it is appropriate to require consumers, in the first instance, to articulate basic elements of any claim that a location is unserved, but that, after such a showing, it is appropriate that providers have the burden to demonstrate, if appropriate, facts that sufficiently rebut the challenger's claim. NRECA supports such an approach, arguing that the Commission should establish a preponderance of the evidence standard and shift the burden of proof to the provider after challenger raises "a legitimate challenge or question regarding the reported service availability." According to NRECA, "[t]his would provide the relevant information in the most efficient manner for resolution." We agree and find that it would be inappropriate to establish a heavier evidentiary burden in consumer challenges than a preponderance-of-the-evidence standard or to place the burden of proof on the challenger at all phases.

88. While consumers will generally have greater familiarity with the circumstances that prompt them to challenge coverage, providers are in the best position to evaluate and document the specifics of their networks at a consumer location. It is thus necessary to shift the burden to the provider to rebut preliminarily valid challenges. These processes will encourage the sharing of information, opportunities for cooperation, and prompt resolution of challenges. We continue to believe that this dispute resolution process achieves the Broadband DATA Act's objectives, while minimizing burdens on the parties and conserving valuable Commission resources to the maximum extent possible.

89. *Consumer Challenge of Fabric Data.* We adopt the proposal in the *Second Order and Third Further Notice* to establish a distinct process for submitting challenges to location information in the Fabric, which would not generally require the involvement of a broadband provider. Specifically, there will be three specific bases for a challenge to the Fabric: placement of location on the map is wrong (geocoder/broadband serviceable location); location is not broadband serviceable (e.g., condemned, not a habitable structure); or serviceable location is not reflected in the Fabric. We will also permit challengers to Fabric data to provide text and documentation in the portal to challenge other aspects of the Fabric data. Challenges to the Fabric data will be filed on the same portal as challenges of availability and coverage map data, along with the submission of much of the same information, including details and evidence about the disputed location and a selection of pre-established categories of disputes. As proposed, the challenge process platform will provide challengers with an acknowledgement of their submissions and information about the process, including expected timing. Also as proposed, the portal

will notify affected providers of the challenge and allow, but not require, them to submit information relating to the Fabric challenge. We also adopt the proposed goal of resolving challenges to the Fabric within 60 days of receipt of the challenge and will provide notification of the resolution to the challenger and affected providers.

2. Challenges by Governmental and Other Entities to Fixed Broadband Internet Access Service and Fabric Data

90. *Challenges to Coverage Data.* As with consumer challenges to fixed data, we largely adopt the proposed processes for challenges from governmental and other entities to coverage and Fabric data. Specifically, we will allow government and other entities to file challenges to coverage reported at locations where they are not actual or potential consumers of the reported broadband service. As proposed in the *Second Order and Third Further Notice*, we will require the following information from these challengers, some of which is the same information as is required for consumer challenges: (1) the name and contact information for the challenging entity; (2) the geographic coordinates (latitude/longitude) or the street addresses of the locations at which coverage is disputed; (3) the names of the providers whose data are being disputed; (4) one or more categories of dispute, selected from pre-established options—e.g., no actual service offering at location, provider failed to install within ten business days of valid order for service, provider denied request for service, installations attempted but unsuccessful, reported speed not available for purchase; (5) evidence/details supporting dispute, including: (a) the challenger’s methodology, (b) factual and other basis for assertions underlying the challenge, and (c) communications with provider, if any, and outcome; and (6) a certification that the information submitted with the challenge is accurate, equivalent to the certification made by providers in submitting their availability data. For government and third-party challenges to Fabric data, we also require challengers to submit details and evidence about the disputed location.

91. We also adopt processes and timeframes for provider replies and dispute resolution for challenges by governmental and other entities, following a similar approach to the one we adopt for consumer challenges to availability and coverage. Specifically, once a challenge containing all the required elements is submitted in the online portal, the locations covered by the challenge will be identified in the public coverage maps as “in dispute by governmental or other entity/pending resolution.”

We decline to give providers 180 days to respond to bulk challenges, as urged by ACA Connects, because this would be contrary to the Broadband DATA Act’s mandate that we adopt a process for “speedy resolution of challenges” and ACA Connects provides no basis for establishing such an extended timeframe for this process. The online portal shall alert a provider if there has been a challenge submitted against it, and providers will have 60 days within which to reply to a challenge by a governmental or other entity in the online portal. In the event that the provider disputes the challenge, the challenger and the provider will then have 60 days to attempt to resolve the challenge. If the parties are able to resolve some or all of the challenge in that time, then they must notify the Commission and the provider must remove any locations that are not served within 30 days and the Commission will remove the “in dispute/pending resolution” for any others so designated.

92. If the parties are unable to reach consensus within 60 days, then the provider must report the outcome of efforts to resolve the challenge in the online portal, after which the Commission will review the evidence and make a determination—with the burden on the provider to demonstrate service availability—either: (1) in favor of the challenger, in which case the provider must remove the location from its Digital Opportunity Data Collection polygon within 30 days of the decision; or (2) in favor of the provider, in which case the location will no longer be subject to the “in dispute/pending resolution” designation on the coverage maps. As with consumer challenges to coverage data, a provider’s failure to timely respond to a challenge will result in a finding for the challenger.

93. A number of parties have raised concerns about the possibility that third-party challenges to coverage data, especially bulk challenges, could be made in bad faith or for inappropriate reasons, such as causing competitive harm to filers. USTelecom and ACA Connects urge the Commission to “use a rigorous process for reviewing non-consumer challenges and apply a clear evidentiary standard particularly for bulk challenges so that the Commission and service providers are not inundated with illegitimate challenges.” USTelecom and WISPA assert that bulk challenges should only be accepted from governmental and Tribal entities or third parties filing on behalf of a consumer or group of consumers that have evidence of failing to obtain service. USTelecom and WISPA argue that other entities will not have a legitimate interest in submitting bulk challenges.

94. We agree that there is some risk that third-party challenges, including bulk challenges,

could be filed for improper purposes but also note that the Broadband DATA Act contemplated that challenges would be open to a variety of entities. Accordingly, we will not categorically exclude any challengers from making these challenges. We believe that requiring governmental and other challengers to explain their methodologies and the bases for their challenges and to certify to the accuracy of the information in their challenges will help to limit spurious filings. We note that, in contrast to consumer challengers, third-party challengers may not always have direct, firsthand knowledge of the on-the-ground facts associated with a challenge. In such cases, third-party challengers will certify to the accuracy of factual assertions concerning how they sourced and processed the information submitted with their challenges. Additionally, as we did in connection with consumer filings, we require that governmental and other filers submit all required elements of a challenge before requiring a provider to respond. We agree with USTelecom that evidence submitted in support of government and third-party challenges must meet a higher standard than preponderance of the evidence. Accordingly, governmental and other third-party challengers must present evidence showing a lack of coverage by clear and convincing evidence. We find that a higher evidentiary standard for governmental and other challenges is appropriate given the relatively more equal level of knowledge and expertise on both sides of this type of challenge, the potentially significant burden that these challenges can impose on providers, and the possibility of bad faith challenges.

95. *Challenges to Fabric Data.* In the *Second Order and Third Further Notice*, the Commission proposed to align the process for challenges by governmental and other entities to the Fabric with the process for consumer challenges to the Fabric data. We conclude that these proposals are appropriate for challenges by governmental and other entities to the Fabric data and adopt this proposal. Accordingly, challenges to the Fabric data by governmental and other entities will be initiated in the same portal as other challenges to coverage and Fabric data with the same filing requirements as apply to consumer challenges to the Fabric. As with other challenges, the portal will provide the challenger with an acknowledgement of the challenge and will notify any affected providers of the challenge and allow, but not require, them to submit information relating to the Fabric challenge. We adopt the proposed goal of resolving challenges to the Fabric within 60 days of receipt of the challenge and, as with consumer challenges, will provide a notification of the outcome of each challenge to the challenger and affected

providers.

96. The Commission received limited comments concerning challenges to the Fabric data. The National States Geographic Information Council (NSGIC) indicates that most states have extensive GIS data that could be useful in challenging the broadband map and the Fabric. The NSGIC urges the Commission to provide an easy, flexible means for states to provide statewide datasets on a wholesale basis. We agree that such information could potentially be extremely useful in improving the accuracy of map and note that states and other entities wishing to submit such data will have the option of submitting them to us as verified third-party data or through a formal challenge to the Fabric.

G. Mobile Service Challenge Process

97. The Broadband DATA Act requires the Commission to adopt rules to establish a user-friendly challenge process through which consumers, State, local, and Tribal governmental entities, and other entities or individuals may submit coverage data to challenge the accuracy of the coverage maps, broadband availability information submitted by providers, or information included in the Fabric. In the *Second Order and Third Further Notice*, the Commission proposed a user-friendly challenge process for consumers, State, local and Tribal governments, and other entities seeking to challenge mobile broadband coverage map data. In this *Third Report and Order*, we adopt the Commission's proposals from the *Second Order and Third Further Notice*, with the modifications described below. As stated in the *Second Order and Third Further Notice*, the Commission's objective in adopting rules is to create a process that "encourages participation to maximize the accuracy of the maps, while also accounting for the variable nature of wireless service."

1. Consumer Challenges of Mobile Coverage Data

98. First, we adopt the proposal to allow consumers to challenge mobile coverage data based on lack of service or poor service quality such as slow delivered user speeds. The Broadband DATA Act requires the Commission to consider the costs to consumers and providers resulting from a misallocation of funds because of a reliance on outdated or otherwise inaccurate information in the coverage maps, and we agree with commenters that permitting mobile broadband coverage challenges will help us verify the accuracy of mobile coverage maps by providing us with a source of on-the-ground data that reflects consumer experience in areas across the country. Specifically, the Broadband DATA Act establishes

minimum speeds of 5/1 Mbps for 4G LTE services as a requirement of demonstrating coverage. In the *Second Order and Third Further Notice* we expanded the Broadband DATA Act's general approach to establishing mobile coverage to 3G and 5G-NR coverage as well. Thus, we do not believe that we could reasonably collect challenges to mobile coverage without relying on speed testing.

99. Consistent with the requirements of the Broadband DATA Act, we adopt our proposals to collect identifying information and speed test data from consumer challengers. In the *Second Order and Third Further Notice*, we proposed to collect identifying information from mobile consumer challengers. The *Third Further Notice* also asked whether such identifying information would cover all potential challenges authorized by the Broadband DATA Act and facilitate participation in the challenge process, while also being detailed enough to discourage frivolous filings. We also proposed to require consumers challenging mobile broadband coverage to submit speed test evidence. The Commission sought comment on whether to require a minimum number of speed tests, specify the distance between speed tests, or require that speed tests be conducted during a specified time period as part of the data collection. The Commission also sought comment on whether it should require the use of a specific speed test application.

100. Commenters supported requiring consumers to supply identifying information and speed test data to enable mobile service providers to defend challenges of mobile broadband data coverage. Commenters also submitted specific recommendations about the information that challengers should be required to include in a challenge and the rules that should apply to speed test data. Commenters urged the Commission to take steps to deter frivolous filings. Commenters also urged us to establish procedures specifying how and when mobile service providers are required to respond to consumer challenges. We agree with commenters that we should require consumer challengers to provide identifying information sufficient to deter frivolous filings, ensure the reliability and consistency of challenges, and specify how and when mobile providers are required to respond to consumer challenges.

101. Submission of certain identifying information is appropriate to deter frivolous filings, and we therefore require consumers challenging mobile broadband coverage data to submit the following information: (1) the name and contact information of the challenger (e.g., address, phone number, and/or email address); (2) the name of the provider being challenged; and (3) a certification that the challenger is

a subscriber or authorized user of the provider being challenged. When collecting, storing, using, or disseminating personally identifiable information in connection with the challenge process described here, the Commission will comply with the requirements of the Privacy Act of 1974, 5 U.S.C. 552(a).

102. We also require consumers to submit speed test data to support their mobile coverage challenges. Consumer challengers must take all speed tests outdoors. Commenters express support for requiring consumers to take speed tests outdoors. Mobile providers are required to submit propagation maps reflecting outdoor coverage, and therefore requiring consumers to perform speed tests outdoors will ensure that speed tests measure the coverage that providers are required to model. Consumer challengers must also indicate whether each test was taken in an in-vehicle mobile or outdoor pedestrian environment. Tests taken on bicycles and motorcycles will be considered tests from in-vehicle mobile environments. Tests taken from stationary positions and tests taken at pedestrian walking speeds will be considered tests taken in outdoor pedestrian environments. Verizon urges the Commission to require, for any drive tests conducted by challengers, that the challenger stop the vehicle to run the test and place the test device outside the vehicle or connect it to an external antenna. We decline to adopt such a requirement because we find that it would add complexity to the speed test rules we adopt for consumer challengers that would be inconsistent with the Commission's obligation under the Broadband DATA Act to adopt a user-friendly approach that encourages participation in the challenge process. As outlined above, as they are submitting their challenges, consumers will be required to indicate whether each test was taken in an in-vehicle mobile or outdoor pedestrian environment.

103. Although the Commission proposed requiring consumer challengers to submit speed test data only in connection with quality of service challenges, we find that consumers challenging mobile broadband availability and/or quality of service should submit the same information in support of both types of challenges. The data typically collected by speed test apps can be used for both types of challenges and the data will be useful for the Commission and challenged parties when evaluating challenger data. To ensure that consumer challenge data meet necessary reporting requirements, we require consumers to use a speed test application that has been designated by OET, in consultation with OEA and WTB, for use in the challenge process. To ensure that the challenge submission format includes an online mechanism as required by Section 802(b)(5)(B)(iv)(I)-(IV) of the Broadband DATA

Act and is user-friendly, and in order to reduce the burdens on consumers seeking to submit challenges, applications approved by OET for collecting consumer challenges must automatically collect the following information associated with each speed test: (1) the geographic coordinates of the test(s) (latitude/longitude); (2) consumer device type, brand/model, and operating system used; (3) download and upload speeds; (4) latency; (5) the date and time of the test; (6) signal strength, if available; (7) an indication of whether the test failed to establish a connection with a mobile network at the time and place it was initiated; (8) network technology (e.g., LTE, 5G) and spectrum bands used for the test; and (9) the location of the server to which the test connected. Commenters generally support including these metrics. In addition, designated applications must allow consumer challengers to submit all of the information required to support a challenge directly to the Commission from their mobile device.

104. Approved speed test applications also must require users submitting challenges to certify that the user is the subscriber or authorized user of the provider being challenged; that the speed test measurements were taken outdoors; and that to the best of the person's actual knowledge, information, and belief, the handset and the speed test application are in ordinary working order and all statements of fact contained in the submission are true and correct. Consumers must also be able to indicate, through the speed test application, whether each test was taken in an in-vehicle mobile or outdoor pedestrian environment. Approved speed test applications also must include an appropriate privacy notice about how consumer data will be stored, used, and protected. We find that requiring the use of approved speed test applications that automatically capture relevant speed test details and allow consumers to submit speed test results directly will both facilitate consumers' participation in the challenge process and enable the Commission to verify that the necessary data are submitted with each challenge in accordance with the requirements of the Broadband DATA Act. We direct OET, in consultation with OEA and WTB, to update the FCC Speed Test App as necessary or develop a new speed test application to collect the metrics and include the functionalities set forth above, so that challengers may use it in the challenge process. We also direct OET to approve additional third-party speed test applications that collect all necessary data and include the functionalities described above.

105. We recognize that, unlike the government and third party challenges, consumers likely will submit challenges regarding distinct, localized areas (e.g., at or near their homes and businesses) and

will not have the time and resources to engage in testing a broader area or for extended periods. In order to encourage consumers to participate in the challenge process, while at the same time assuring that providers are not subject to the undue cost of responding to a large number of challenges to very small areas, we direct OEA, in consultation with WTB, to determine the threshold number of mobile consumer challenges within a specified area that will constitute a challenge triggering a provider's obligation to respond. In the *Second Order and Third Further Notice*, the Commission sought comment on establishing rules for consumer challengers, including rules requiring a minimum number of speed test observations. Mobile service providers argue that a requirement to respond to every consumer challenge would be a substantial burden. While we cannot predict precisely how many challenges consumers will submit, we expect the number will be significant and agree that the challenge process should resolve challenges in an efficient manner, mitigate the time and expense involved, and ensure that the mobile coverage maps are as reliable and useful as possible. To meet these objectives, the Commission will aggregate speed test results received from multiple consumer challengers in the same general area. When these aggregated results reach an appropriate threshold, they will constitute a cognizable challenge requiring a provider response. We direct OEA, in consultation with WTB, to establish the methodology for determining this threshold. In developing this methodology, OEA should consider, *inter alia*, the number, location, and timing of the tests, variability in test results, and whether the tests were conducted in urban or rural areas.

106. We also direct OEA, in consultation with WTB, to establish the methodology for determining the boundaries of a geographic area where the threshold for a cognizable challenge has been met. For example, AT&T has submitted a preliminary proposal for defining a challenge area based on the test data submitted by the challenger(s), and we direct OEA, in consultation with WTB, to consider this proposal as well as other proposals as they develop the methodology that will be used. Speed test results submitted by consumer challengers that do not reach the threshold of a cognizable challenge will nevertheless be incorporated in the Commission's analysis of crowdsourced data. We direct OEA, in consultation with WTB, to establish the procedures for notifying service providers of cognizable challenges filed against them. Finally, we agree with AT&T that experience over time may warrant adjustments to the methodology used to define the scope of a challenge. To the extent that experience

warrants that the specifications, data format, or methodology for making such a determination be refined or adjusted, we further direct the staff, after notice and comment, to adjust the methodology for determining the threshold for a challenge and for establishing the boundaries of a challenge area.

107. *Challenge Responses.* For challenged areas, we require providers either to submit a rebuttal to the challenge or to concede the challenge within a 60-day period of being notified of the challenge. We agree with commenters that permitting 60 days to respond to a challenge, rather than the proposed 30 days, makes the challenge process more manageable for providers, while also providing for speedy resolution of challenges consistent with the requirements of the Broadband DATA Act.

108. To rebut a challenge, we require each provider to submit to the Commission either on-the-ground test data or infrastructure data, so that Commission staff can examine the provider's coverage in the challenged area and resolve the challenge. We recognize that on-the-ground testing or infrastructure data alone may not be sufficient for the Commission to evaluate a challenge fully in all cases. To the extent that a service provider believes that it would be helpful to the Commission in resolving a challenge, the provider may submit other data in addition to the required data, including but not limited to, either infrastructure or on-the-ground testing data (to the extent such data are not the primary rebuttal option submitted by the provider) or other types of data, such as data collected from network transmitter monitoring systems or software, or spectrum band-specific coverage maps. To permit speedy resolution of challenges, such other data must be submitted at the same time as the primary on-the-ground testing or infrastructure rebuttal data submitted by the provider. If needed to ensure adequate review, OEA may also require that the provider submit other data in addition to the data initially submitted, including but not limited to, either infrastructure or on-the-ground testing data (to the extent not the option initially chosen by the provider) or data collected from network transmitter monitoring systems or software (to the extent available in the provider's network) within 60 days upon OEA's request.

109. We agree with commenters that adopting a flexible approach for responding to challenges will help mitigate the time and expense involved and encourage prompt resolution in accordance with the requirements of the Broadband DATA Act. This approach is consistent with our decision to give service providers a choice in how to respond to coverage map verification requests from staff, and both types of

data generally should enable us to review the merits of the challenge while at the same time affording the service providers the opportunity to decide the most cost-effective means of rebutting the challenge on a case-by-case basis. A mobile service provider that submits on-the-ground test data to rebut a challenge will be subject to the same on-the-ground test data requirements and specifications as apply to provider submissions of the data in the verification context described above. Similarly, a mobile service provider that submits infrastructure data to rebut a challenge will be subject to the same infrastructure data requirements and specifications that apply to case-by-case provider submissions of these data in the verification context described above. In the *Second Order and Third Further Notice*, the Commission proposed that mobile providers seeking to rebut a challenge must submit a reply in the online portal within 30 days of being notified of a challenge. For challenges involving delivered speeds, the Commission also proposed that a provider disputing the challenge must submit evidence that it has evaluated the speed of its service at the location of the dispute and has determined that the delivered speeds of the service match the speeds indicated on the provider's coverage map. Providers argue that the Commission should permit additional time to respond to challenges. They also urge the Commission to allow providers flexibility in responding to challenges. CTIA argues that the Commission's rules should not require providers to respond in a particular way and that the most appropriate response will vary depending on the nature of the challenge. Verizon similarly urges the Commission to allow providers multiple options for responding to challenges, including providing on-the-ground speed test measurements, data collected from transmitter monitoring software, or other speed test data" In cases where providers must revise maps in response to a challenge, CTIA requests that providers be allowed to update maps as part of their next Digital Opportunity Data Collection filing.

110. Several mobile providers urge the Commission to provide additional flexibility in the types of data that can be submitted in response to consumer challenges, and they specifically argue that they should be permitted to submit drive testing data collected in the ordinary course of business, third-party testing data, such as Ookla data, and/or tower transmitter data collected from monitoring software. The provider may voluntarily submit these or other types of additional data to support its rebuttal, but we do not believe the record supports a finding that such data are sufficient to permit such alternative data to be a complete substitute for either on-the-ground testing or infrastructure data. We therefore direct OEA

to review such data when voluntarily submitted by providers in response to consumer challenges. If, after reviewing such data, OEA concludes that any of the data sources are sufficiently reliable, we direct them to specify the appropriate standards and specifications for each type of data and add it to the alternatives available to providers to rebut a consumer challenge. In so directing OEA to make such a determination, we specifically recognize that such an analysis may lead them to expand the options available to providers for responses with respect to consumer challenges, but not do so for other purposes, including responses to governmental and other entity challenges and/or verification investigations.

111. When a provider responds to a consumer challenge, the consumers who submitted the data will be notified and be able to see the provider's response. We direct OEA to develop a methodology and mechanism to determine if the data submitted by a provider constitute a successful rebuttal to all or some of the challenged service area and to establish procedures to notify challengers and providers of the results of the challenge. Consistent with our decision in the fixed context, we direct OEA to use the "preponderance of the evidence" standard in creating the mechanism to resolve challenges with the burden on the provider to verify their coverage maps in the challenged area. If a provider that has failed to rebut a challenge subsequently takes remedial action to improve coverage at the location of the challenge, the provider must notify the Commission of the actions it has taken to improve its coverage and provide either on-the-ground test data or infrastructure data to verify its improved coverage.

112. Consistent with the fixed challenge process, in cases where a mobile service provider concedes or loses a challenge, the provider must file, within 30 days, geospatial data depicting the challenged area that has been shown to lack service. Such data will constitute a correction layer to the provider's original propagation model-based coverage map, and Commission staff will use this layer to update the broadband coverage map. In addition, to the extent that a provider does not later improve coverage for the relevant technology in an area where it has conceded or lost a challenge, it must include this correction layer in its subsequent Digital Opportunity Data Collection filings to indicate the areas shown to lack service.

2. Challenges by Governmental and Other Entities to Mobile Data

113. *Minimum Requirements for Challengers.* For the reasons described above regarding consumer challenges of mobile provider data, where we allow consumers to submit mobile broadband

coverage challenges based on lack of mobile broadband service or poor service quality, such as slow delivered speeds, we also permit governmental and other entities to challenge mobile broadband coverage based on those grounds.

114. In the *Second Order and Third Further Notice*, the Commission proposed that governmental and other entities follow a grid-based approach for submitting standardized challenge data. Specifically, the Commission proposed to overlay a uniform grid of one square kilometer (1 km by 1 km) grid cells on each carrier's propagation model-based coverage maps and then require governmental and other entities interested in challenging the accuracy of a carrier's map to submit user speed test measurement data showing measured user throughput speeds in the area they wish to challenge. Measurement data indicating speed levels below applicable parameters in the challenged area would constitute evidence that a provider's coverage map may not be accurate. The Commission asked for comment on the number of speed test measurements it should require in each grid cell and discussed alternative approaches, including requiring challengers to submit at least three speed test measurements per square kilometer grid cell in the disputed area or speed test measurements in a certain percentage of grid cells in a challenged area.

115. Commenters disagree concerning the Commission's proposal. AT&T, for example, argues that the proposed approach is overly complex and that the Commission should instead permit challengers to conduct speed tests in the area they wish to challenge and submit the results with latitude and longitude information. Verizon urges the Commission to adopt strict evidentiary standards and argues that requiring three speed test measurements per square kilometer grid cell is insufficient to assess coverage. The California PUC opposes the proposed grid-based approach, urging the Commission instead to provide more flexibility to government entities submitting challenges.

116. For mobile broadband coverage challenges, we require government and third-party entities to submit speed test data, but we decline to adopt the grid-based approach described in the *Second Order and Third Further Notice*. The Broadband DATA Act requires the Commission to consider lessons learned from the challenge process established in the Mobility Fund Phase II proceeding, and we agree with commenters that the grid-based approach that the Commission adopted in that proceeding added unnecessary complexity for challengers. Adopting a grid-based approach for this proceeding could

also discourage participation by government and third-party entities. We recognize that such challengers may use different tools to obtain speed test measurement data, including their own data gathering and mapping programs. We want to create a flexible approach that permits these parties to participate in the challenge process, so that the Commission may use their data to improve the mobile broadband coverage maps.

117. To give flexibility to challengers, we will not require government and other entity challengers to use a Commission-approved speed test application, but rather will allow them to use their own software to collect data for the challenge process. When they submit their data, however, the data must contain the following metrics for each test: (1) the geographic coordinates of the tests (i.e., latitude/longitude); (2) the name of the service provider being tested; (3) the consumer-grade device type, brand/model, and operating system used for the test; (4) the download and upload speeds; (5) the latency; (6) the date and time of the test; (7) whether the test was taken in an in-vehicle mobile or outdoor pedestrian environment, and if in-vehicle, whether the test was conducted with the antenna outside of the vehicle; (8) for an in-vehicle test, the speed the vehicle was traveling when the test was taken, if available; (9) the signal strength, if available; (10) an indication of whether the test failed to establish a connection with a mobile network at the time and place it was initiated; (11) the network technology (e.g., LTE, 5G) and spectrum bands used for the test; and (12) the location of the server to which the test connected. Given the more complex nature of government and other entity data gathering programs, we require government and other entity challengers to submit more detail regarding speed tests that were taken in an in-vehicle mobile environment than we require for consumer challengers. Commenters express support for providing flexibility for governmental and third-party challenges. We note that these metrics are substantially the same as the metrics we require approved speed test applications to collect for consumer challenges. Commenters generally support including these metrics. Government and third-party challengers must also submit a complete description of the methodologies used to collect their data. We also adopt the Commission's proposal to require government and other entities to substantiate their data through the certification of a qualified engineer or official. Although the California PUC opposes such a requirement based on concerns about cost, it does not quantify potential costs and we find that requiring a certification from a qualified engineer or official is necessary to help ensure the reliability of the different

methodologies that governmental and other entity challengers may use to collect their data. Moreover, for those governmental and other entities wishing to avoid costs associated with certifying the results, they remain free to submit challenge data to the Commission through approved applications under the consumer challenge process.

118. We require government and other entity challengers to conduct on-the-ground tests using a device advertised by the challenged provider as compatible with its network and to conduct all tests outdoors. To avoid adding additional complexity, we decline requests to adopt additional evidentiary standards, such as a maximum speed for in-vehicle tests, but direct OEA, WTB, and OET to adopt additional testing requirements if it determines it is necessary to do so.

119. We also will permit competing mobile service providers to submit challenges. In the *Second Order and Third Further Notice*, the Commission acknowledged that a mobile service provider might have different motives for challenging a competitor's propagation models and coverage maps than governmental entities and other third parties that do not provide competing mobile broadband Internet access service, and the Commission sought comment on whether to permit challenges from competing mobile providers. At least one commenter expresses concern about permitting challenges from competing mobile providers. While we recognize the concerns that have been expressed, we nevertheless conclude that, on balance, the maps will be a more reliable data source with those challenges than without. As we conclude that we will permit challenges from other service providers, we do not pass on the question of whether we may lawfully exclude any class of potential challenger. We also decline to establish different evidentiary standards for competing mobile service providers and instead require them to follow the same rules as other non-consumer challengers. We expect that the requirements and procedures we adopt for challenging mobile broadband coverage data will allow us to verify and ensure the reliability of challenge process data submitted by all challengers in accordance with the Commission's obligations under the Broadband DATA Act. And, given the potential costs of widespread on-the-ground testing, we expect that like other entities, service providers will not waste resources lodging challenges they know are unlikely to succeed.

120. Consistent with the approach we adopt for consumer challenges in the mobile context, we will aggregate speed test evidence received from multiple governmental and third-party challengers in the

same general area. When these aggregated results reach an appropriate threshold to be determined by the OEA, they will constitute a cognizable challenge that requires a provider response. We direct OEA, in consultation with WTB, to establish the methodology for determining this threshold and establishing the boundaries of an area where the threshold has been met. On-the-ground test data submitted by governmental and third parties that do not reach the threshold of a cognizable challenge will be considered in the Commission's analysis of crowdsourced data. Finally, we agree with AT&T that OEA's experience over time in verifying coverage data and evaluating challenges may warrant adjustments to the methodology used to define the scope of a challenge. To the extent that such experience warrants adjustment or refinement to the specifications, data format, or methodology for making such a determination, we further direct the staff, after notice and comment, to adjust the methodology for determining the threshold for a challenge and for establishing the boundaries of a challenge area.

121. *Challenge Responses.* We adopt the same challenge response process for government and third-party entities as we do for consumer challenges in the mobile context. We require providers either to submit a rebuttal to the challenge within a 60-day period of receiving notice of the challenge, which rebuttal shall consist of either data from on-the-ground tests or infrastructure data, or else concede the challenge and thereby have the challenged area identified on the mobile coverage map as an area that lacks sufficient service. We have directed OEA and WTB to develop the specific requirements and methodologies that providers must use in conducting on-the-ground testing and in providing infrastructure data. In response to commenters that urge the Commission to provide additional flexibility in the types of data that can be submitted in response to government and third-party challenges, we note that, to the extent that a service provider believes it would be helpful to the Commission in resolving a challenge, the provider may submit other data in addition to the data initially required. These other data may include, but are not limited to, either infrastructure or on-the-ground testing data (to the extent such data are not the primary option chosen by the provider) or other types of data, such as data collected from network transmitter monitoring systems or software, or spectrum band-specific coverage maps. The data submitted by providers will be reviewed by OEA. To the extent that such review supports a conclusion that any such data are sufficiently reliable, OEA shall specify appropriate standards and specifications for

that type of data and add it to the alternatives available to providers to rebut governmental and other third-party challenges. To permit speedy resolution of a challenge, such other data must be submitted at the same time as the primary on-the-ground testing or infrastructure rebuttal data submitted by the provider.

122. We recognize that on-the-ground testing or infrastructure data alone may not be sufficient for the Commission to investigate a challenge fully in all cases. Accordingly, if needed to ensure an adequate review, OEA may also require that the provider submit other data in addition to the data initially submitted, including but not limited to, either infrastructure or on-the-ground testing data (to the extent not the option initially chosen by the provider) or data collected from network transmitter monitoring systems or software (to the extent available in the provider's network) within 60 days upon OEA's request.

123. We decline to adopt the suggestion of certain commenters that the Commission permit government and other entities to file challenges only during a limited time period each year because we find that it would likely inhibit participation in the challenge process and limit the Commission's ability to obtain timely data that will help us improve the accuracy of mobile coverage maps. However, we will only accept new challenges to the most recently published coverage maps. If a provider that has failed to rebut a challenge subsequently takes remedial action to improve coverage at the location of the challenge, the provider must notify the Commission of the actions it has taken to improve its coverage and provide either on-the-ground test data or infrastructure data to verify its improved coverage.

124. Consistent with the fixed challenge process and with the process we adopt for consumer challenges in the mobile context, in cases where a mobile provider concedes or loses a challenge, the provider must file, within 30 days, geospatial data depicting the challenged area that has been shown to lack sufficient service. To the extent a provider must make multiple updates to its coverage maps as a result of the challenge process, it can batch them together, but all updates must meet the 30-day deadline. Such data will constitute a correction layer to the provider's original propagation model-based coverage map, and Commission staff will use this layer to update the broadband coverage map. In addition, to the extent that a provider does not later improve coverage for the relevant technology in an area where it conceded or lost a challenge, it must include this correction layer in its subsequent Digital Opportunity Data Collection filings to indicate the areas shown to lack service.

3. Public Availability of Information Filed in the Challenge Processes

125. Consistent with our proposal in the *Second Order and Third Further Notice*, the Commission will make public the information about the location that is the subject of the challenge (including the street address and/or coordinates (latitude and longitude)), the name of the provider, and any relevant details concerning the basis for the challenge. Commenters support this proposal, and we agree that public input will be most effective if these data are made available, so that all stakeholders have access to the facts and methods through which coverage is evaluated in the challenge process. We will keep all other challenge information, such as individual contact information, private based on the personal privacy interests involved and our conclusion that its disclosure would not be “helpful to improve the quality of broadband data reporting.”

H. Implementation of Broadband Locations Fabric Database

126. In the *Second Order and Third Further Notice*, the Commission noted that, while the Broadband DATA Act authorizes the Commission to contract for the creation and maintenance of the Fabric, the Commission had not been appropriated funding to cover the cost of implementing the Fabric. Congress has recently authorized funding for the implementation of the Digital Opportunity Data Collection and the Fabric, which will enable us to move forward with procurements and other steps necessary to create and operate these platforms. Today we adopt certain definitions and standards for use in the context of the Fabric. As an important first step, we adopt as the fundamental definition of a “location” for purposes of the Fabric: a business or residential location in the United States at which fixed broadband Internet access service is, or can be, installed. This definition closely tracks the one used in connection with the Commission’s high-cost programs, as proposed in the *Second Order and Third Further Notice*, with slight refinements to align with the language of the Broadband DATA Act. We also adopt the proposal to have the Fabric reflect each location as a single point defined by a set of geographic coordinates that fall within the footprint of a building. We note that USTelecom and WISPA urge us to reflect locations as a single point, defined by both geographic coordinates and street addresses. We agree with USTelecom and WISPA that street addresses are textual and can be inconsistent as a label. Accordingly, while street addresses are likely to be useful in the Fabric, we decline to commit to a specific role for such data until we are able to determine the types of data and functionality that will be

available through the procurement process.

127. Additionally, we adopt definitions of “residential location” and “business location” that are based on the definitions of those terms that are used in connection with the CAF, with some modifications. We note that there was significant support in the record for defining locations in the Fabric consistent with the guidance in the CAF, and we do so here with certain refinements. Specifically, we will treat the following as a “residential location” in the Fabric: all residential structures, including all structures that are, or contain, “housing units” or “group quarters” based on the U.S. Census Bureau definition of these terms. We determine to include group quarters in this definition, which is a departure from the definition used in connection with the CAF, because we believe this will be more consistent with the intention of the Broadband DATA Act that the Fabric include “all locations in the United States where fixed broadband Internet access service can be installed.”

128. We will treat the following as business locations in the Fabric: all non-residential (business, government, non-profit, etc.) structures that are on a property without residential locations and that would be expected to demand broadband Internet access service. As with residential locations, we define a building with multiple offices as a single location in the Fabric, and we anticipate that each individual building will be a location. However, as with residential locations, we recognize that there may be instances where it is not appropriate to count every building as a distinct location (e.g., buildings without power or multiple buildings on the same property owned and occupied by the same entity). We direct OEA, in consultation with WCB, to ensure that locations reflect broadband serviceability to the extent they are able to make determinations given the data available.

129. We anticipate that the Fabric will include all individual structures to which broadband Internet access service can be installed, consistent with the proposal in the *Second Order and Third Further Notice*. There may be some circumstances, however, where counting each individual building or structure might not reflect the way broadband service is provisioned (e.g., broadband may not be deployed individually to each occupied boat in a marina or to a central location in the marina; or to homes without electric power). For example, from the definition of “housing units” at <https://www.census.gov/housing/hvs/definitions.pdf>: “Tents and boats are excluded if vacant, used for business, or used for extra sleeping space or vacations” so occupied boats are housing units . . . which is

much easier for a snapshot in time as the census officially is.” As USTelecom and WISPA note, “[t]he Fabric, as it is described in the Broadband DATA Act, is intended to report serviceable locations so that when providers report on top of the Fabric, those locations with available service and those lacking service will be revealed with granularity.” We direct OEA, in consultation with WCB, to ensure that locations reflect broadband serviceability to the extent they are able to make determinations given the data available. For example, USTelecom and WISPA seek guidance on whether mobile homes will be treated as housing units for purposes of the Fabric, contending that land use and tax records can resolve ambiguities on whether such structures are stationary or recreational vehicles temporarily at a location.

130. As proposed, we determine to identify a Multi-Tenant Environment as a single record in the Fabric and, to the extent feasible, to associate the number of units within each Multi-Tenant Environment with the Multi-Tenant Environment’s location information in the Fabric. USTelecom and WISPA support this approach because of the difficulty in precisely identifying all of the individual units in Multi-Tenant Environments, especially large ones, and because, as Connected Nation notes, “capturing information on the location of each unit within every Multi-Tenant Environment across the United States would likely be cost-prohibitive, and also unnecessary, given that broadband service delivered to a given Multi-Tenant Environment structure would be made available to all units within that structure.” It is because of this difficulty and additional burden on providers that we disagree with commenters such as NRECA and the City of New York that argue for assigning unique location identifiers to each unit in a Multi-Tenant Environment. In the end, we direct OEA, in consultation with WCB, to analyze these determinations during the procurement process. If appropriate, we direct OEA and WCB, after seeking further notice and comment in this docket, to determine whether to add to the types of datapoints or metrics to be associated with individual locations in the Fabric.

131. For non-residential (i.e., business) locations that share a property with residential locations, we anticipate that there may in some instances be differences in broadband serviceability. For example, a multi-tenant unit with storefronts on the ground floor and apartments above might have multiple building entries for residential and business service and so it might be appropriate to treat that single building as both a residential and a business location. Or, a family farm might include both a farmhouse and separate office building (along with a number of outer structures like barns, sheds, silos,

coops, etc.). We direct OEA, in consultation with WCB, to ensure that the treatment of such situations reflects broadband serviceability to the extent they are able to make determinations given the data available.

132. Finally, we note that the the procurement process will define what types of data and functionality are available and practical for inclusion in the Fabric. Accordingly, we find that it would be premature to make further determinations about features or elements of the Fabric at this point and direct OEA, in consultation with WCB, to also determine what additional features or datasets are both available and useful for inclusion in the Fabric.

I. Enforcement

133. The Broadband DATA Act makes it unlawful for an entity or individual to willfully and knowingly, or recklessly, submit information or data that is materially inaccurate or incomplete with respect to the availability of broadband Internet access service or the quality of service with respect to broadband Internet access service. In the *Second Order and Third Further Notice*, the Commission adopted this requirement and sought comment on its implementation and how best to enforce the Digital Opportunity Data Collection rules. We recognize that there is uncertainty surrounding the timing of implementation of various aspects of the Digital Opportunity Data Collection, but we decline to commit to forgoing enforcement at this time. We expect all parties to work in good faith to comply at all times with the requirements in effect and will evaluate the appropriateness of taking enforcement action accordingly.

134. In the *Second Order and Third Further Notice*, the Commission sought comment on how the Commission should determine whether an entity or individual “willfully and knowingly” or “recklessly” submitted inaccurate or incomplete information. The Commission noted that other statutes the Commission enforces, such as section 510(a) of the Communications Act, include a similar standard of proof. The Commission therefore asked commenters what types of evidence the Commission would need to show that an entity or individual “willfully and knowingly” or “recklessly” submitted materially inaccurate or incomplete information.

135. Commenters generally agree that the Commission should adopt its proposed definition of “willfully and knowingly.” The City of New York argues that the Commission should penalize

intentional and unintentional reporting errors. We do not believe providers should be held strictly liable for all mistakes that may be made in Digital Opportunity Data Collection semiannual filings, nor does the statute require such an interpretation. Minor inaccuracies will undoubtedly be discovered by providers through the crowdsourcing, challenge process, audits, and other verification methods established through this proceeding, and enforcement action should be reserved for information or data that is materially inaccurate or incomplete with respect to the availability of broadband services and is submitted willfully and knowingly, or recklessly. As the Commission stated in the *Second Order and Third Further Notice*, “recklessly” also suggests more than mere negligence but something less than intent. A number of commenters generally agree with this definition. USTelecom suggests the Commission define “recklessly” as “without any reasonable effort to determine the accuracy of the data submitted.” ACA Connects suggests that a provider acts recklessly when “it persistently fails to file accurate or complete DODC reports and files such reports without a reasonable basis for believing they are accurate and complete.”

136. Because the Broadband DATA Act does not define “willful and knowingly or recklessly,” we find it reasonable to look to Commission precedent, and, to the extent that the Commission has defined such terms in an enforcement context, to use those definitions for purposes of enforcement actions under the Broadband DATA Act. The Commission has interpreted “willful” as the “conscious and deliberate commission or omission of [any] act, irrespective of any intent to violate” the law. We therefore believe the Commission may determine whether conduct is “willful and knowing or reckless” without the need to further clarify this point in our rules. Consistent with the *Second Order and Third Further Notice* and the record, the Commission will determine the nature of the violation in complying with Digital Opportunity Data Collection rules on the grounds of “willfully and knowingly or recklessly” submitting inaccurate or incomplete information on a case-by-case basis, consistent with Commission precedent.

137. The *Second Order and Third Further Notice* also requested comment on the definition of “materially inaccurate or incomplete,” including whether the Commission should adopt a qualitative or quantitative definition, and what level of inaccuracy or incompleteness the information would have to reach before it would be considered “material.” Additionally, the Commission noted that section

1.17(a)(2) of its rules already makes it unlawful to “provide material factual information that is incorrect or omit material information,” and that the Commission has held that a false statement may constitute an actionable violation of that rule, even absent an intent to deceive, if it is provided without a reasonable basis for believing that the statement is correct and not misleading.

138. Based on the record and given our obligation to ensure that providers submit accurate and complete coverage information, we define “materially inaccurate or incomplete” as a submission that contains omissions or incomplete or inaccurate information that the Commission finds has a substantial impact on its collection and use of the data collected in compliance with the Broadband DATA Act. The Commission will find a false statement submitted by a provider as part of its Digital Opportunity Data Collection obligations to be an actionable violation of section 1.17(a)(2), even absent an intent to deceive, if the statement is provided without a reasonable basis for believing that the statement is correct and not misleading. We adopt a qualitative approach that focuses on the nature of the inaccuracy or incompleteness, rather than a quantitative standard that would require a showing of multiple inaccurate or incomplete filings in order to rise to the level of material. The Commission may consider successful challenges to a provider’s data as evidence to determine whether a submission is materially inaccurate or incomplete.

139. *Penalties.* The Commission sought comment on the scope of appropriate penalties for submitting materially inaccurate or incomplete information, including any civil penalties under the Commission’s rules or other applicable statutes and rules. We will assess penalties against providers that file materially inaccurate or incomplete information in the same manner that the Commission enforces other types of violations under the Communications Act. USTelecom and WISPA asked the Commission to only enforce penalties against providers that make material errors and to find that inadvertent errors (whether material or not) should not be subject to penalties. Several other commenters asked the Commission not to penalize providers for all submissions that have flaws, or contain minor, inadvertent, or *de minimis* errors or omissions. As discussed, consistent with the requirement of the Broadband DATA Act, the Commission will enforce penalties against providers who “willfully and knowingly, or recklessly, submit information or data that is materially inaccurate or incomplete with respect to the availability of broadband internet access service or the quality of service with respect to broadband

internet access service.” The Enforcement Bureau will have the ability to enforce penalties against providers for all submissions that meet this threshold. Section 503(b)(2)(E) of the Communications Act and section 1.80(b)(8) of our Rules set forth the factors to be considered when determining the amount of forfeiture penalties and empowers the Enforcement Bureau to adjust a forfeiture penalty based on several factors. These factors include, “the nature, circumstances, extent and gravity of the violation and, with respect to the violator, the degree of culpability, any history of prior offenses, ability to pay, and such other matters as justice may require.”

140. The Commission also sought comment on whether to establish a base forfeiture amount, subject to adjustment pursuant to section 503(b) of the Act, and what that amount should be. Only ACA Connects responded, asserting that “failure to provide required forms or information to the Commission is subject to a \$3,000 base forfeiture under the Commission’s rules and this amount could serve as a rational starting point for the Commission’s forfeiture calculations for [Digital Opportunity Data Collection] violations.” While the ACA Connects comments appear to address only failure to file required forms or information, we note that our decision to impose a base forfeiture amount pertains to both materially inaccurate or incomplete Digital Opportunity Data Collection filings as well as the failure to file required Digital Opportunity Data Collection filings. To reflect the importance of the filings at issue, and to encourage compliance, we impose a base forfeiture of \$15,000 per violation on providers that file materially inaccurate or incomplete information. We point out that this base forfeiture amount will apply in cases where providers file materially inaccurate or incomplete information, and in cases where providers fail to make Digital Opportunity Data Collection filings. We find this amount appropriate to deter bad actors from willfully and knowingly, or recklessly submitting materially inaccurate or incorrect coverage data or information, and to create sufficient incentive for providers to submit accurate Digital Opportunity Data Collection submissions. In setting this base forfeiture amount, we consider the types of entities required to make Digital Opportunity Data Collection submissions, the need for accurate and precise broadband availability maps, and the potential harm to the public of having maps that reflect an inaccurate or incomplete picture of broadband availability.

141. We do not require the Enforcement Bureau to look at a provider’s filing as a singular whole. Instead, the Enforcement Bureau may consider whether a filing has multiple omissions or

inaccurate data and may consider each of those to be a separate violation. We reject the proposal put forth by the State of Colorado that would result in providers losing eligibility to receive universal service funding or forfeiture of previously committed universal service funds, and do not adopt the proposal by Next Century Cities, ACA Connects, and others to set a standard that offers multiple warnings before imposing sanctions on providers. We are not persuaded that a new enforcement mechanism such as the one advocated by the State of Colorado will appropriately deter providers from filing materially inaccurate or incomplete Digital Opportunity Data Collection filings. Commenters were divided on the State of Colorado's proposal to make providers ineligible to receive USF funds, with states and localities supporting such a proposal, while providers generally were not supportive. Commenters also agreed that the Commission's existing forfeiture adjustment rules are sufficient. Regarding the Next Century Cities proposal, while we find that it is important to establish a clear set of rules that consistently apply to all providers, we note that the Enforcement Bureau may exercise discretion to take into account where appropriate the size and geographical location in which a provider makes service available. Warnings or reduced forfeitures can also be determined on a case-by-case basis. Moreover, some providers, such as certain wireless Internet service providers, are already entitled to a citation before being subjected to a forfeiture under section 503 of the Act.

142. The Commission also proposed and sought comment on an approach that would distinguish between entities that make conscientious and good faith efforts to provide accurate data and those that fail to take their reporting obligations seriously or affirmatively manipulate the data being reported. We find that adopting this proposal is unnecessary because the statute only addresses situations in which an individual or entity "willfully, knowingly, or recklessly, submit[s] information or data . . . that is materially inaccurate or incomplete with respect to the availability of broadband internet access service or the quality of service with respect to broadband internet access service." The Commission has adopted the statute's standard and the Enforcement Bureau will use it to measure if errors, inaccuracies, or incomplete filings that are discovered merit enforcement action, regardless of whether those errors, inaccuracies, or incomplete filings are made in good faith or otherwise.

143. The Commission also sought comment on whether section 803 of the Broadband DATA Act is an exclusive remedy for all actions under the Act or whether behavior that may be actionable under

existing provisions of the Communications Act or our rules remain subject to enforcement under our general section 503 authority. No commenters responded to this question. The Broadband DATA Act does not state that section 803 should be considered the exclusive mechanism to enforce its provisions. Since the Broadband DATA Act amends the Communications Act, we find that our existing authority under section 503 of the Communications Act allows us to enforce penalties against providers who willfully, knowingly, or recklessly file materially inaccurate or incomplete broadband availability data in violation of the Broadband DATA Act or any other provision of the Communications Act. Retaining section 503 authority will enable the Commission to enforce the requirements of the Broadband DATA Act under section 503 and ensure that providers are appropriately deterred from making inaccurate data submissions.

144. *Penalties for failure to file.* Consistent with the approach the Commission adopted in the *Digital Opportunity Data Collection Order and Further Notice* and the Commission's proposal in the *Second Order and Third Further Notice*, failure to timely file required data in the new Digital Opportunity Data Collection may lead to enforcement action and/or penalties as set forth in the Communications Act and other applicable laws. Timely filed Digital Opportunity Data Collection information is critical for the Commission to ensure its maps are as accurate and up-to-date as possible. The Commission has discretion to make upward or downward adjustments from the base forfeiture amount taking into considerations the facts of each individual case. To the extent a covered provider, however, either fails to file required data, or files incorrect data in a subsequent submission, we will consider each action a separate violation. The City of New York agrees with the Commission's proposal to penalize providers who fail to file the required Digital Opportunity Data Collection information and argues that penalties should be ongoing until the violation is cured. We disagree that the violations should be "ongoing" since a failure to take an action (filing a report) is a discrete obligation.

145. *Filing corrected data.* In the *Second Order and Third Further Notice*, the Commission proposed that providers must revise their Digital Opportunity Data Collection filings any time they discover an inaccuracy, omission, or significant reporting error in the original data that they submitted, whether through self-discovery, the crowdsourcing process, the challenge process, the Commission verification process, or otherwise. ACA Connects and NCTA argue that the Commission should only

require providers to correct their Digital Opportunity Data Collection reports for a “significant reporting error” that impacts the Commission’s coverage maps and not every time a provider’s broadband reporting is inaccurate. Given the importance the Commission and Congress have placed on the need for accurate data throughout the Digital Opportunity Data Collection proceeding and implementation of the Broadband DATA Act, we find it necessary to have providers file corrected data when they discover any inaccuracy, omission, or significant reporting error in the original data that they submitted, whether through self-discovery, the crowdsourcing process, the challenge process, the Commission verification process, or otherwise, so that the Commission can maintain the most accurate and up-to-date data and maps. We will not excuse providers from updating their data for non-significant reporting errors.

146. While the Commission proposed and sought comment on having providers file corrections within 45 days of their discovery of incorrect data and that corrected filings be accompanied by the same types of certifications that accompany the original filings, in order to avoid confusion and create consistency among Digital Opportunity Data Collection requirements, we find that a 30-day window that aligns with the crowdsourcing and challenge processes is more appropriate and gives adequate time for service providers to make all necessary corrections to their coverage data. USTelecom and WISPA, ACA Connects, and NCTA argue that the Commission should allow providers to correct their filings as part of their next Digital Opportunity Data Collection data submission. As the Commission previously stated, reporting entities that make a good-faith effort to comply fully and carefully with reporting obligations should not be sanctioned if their data prove to be flawed in some way, provided that any errors be quickly and appropriately addressed. Our 30-day window ensures that errors will be “quickly and appropriately addressed,” whereas allowing providers to correct inaccurate data as part of their next Digital Opportunity Data Collection data submission could result in data being left inaccurate for as much as six months.

147. Consistent with the crowdsourcing process and challenge process, we require that corrected data be filed within 30 days and that it must include the required certifications. The 30-day period for filing corrected data does not change a provider’s obligation to file updated and corrected data within 30 days following any discrepancies found through the crowdsourcing process. As discussed in the *Second Order and Third Further Notice*, once Commission staff evaluates a particular crowdsourced

data submission and establishes the need to take a closer look at a provider's data, staff will offer the provider an opportunity to explain any discrepancies between its data and the Commission's analysis. If the provider agrees with staff analysis, then it must refile updated and corrected data within 30 days of that determination. Providers, however, will be allowed to bundle multiple crowdsourced corrections into one filing during the 30-day period. The Commission also proposed that such corrections generally should be forward-looking only and that providers be required to disclose in their next semiannual filing any corrections made as a result of the challenge or crowdsource processes. Commenters agree that corrections should be forward-looking only, and we also adopt this proposal. Finally, the Commission further proposed that, for purposes of calculating the statute of limitations, the one-year limit would begin to accrue on the date of the corrected filing, where the correction was timely submitted under the Commission's rules. We did not receive comments on the proposed statute of limitations, and we adopt that proposal. Where the Commission determines it is appropriate to propose a forfeiture for a violation, it must do so within a one-year statute of limitations. We adopt this proposal in order to ensure the Commission has ample time to consider and review corrected information, and, if necessary, adjudicate enforcement actions.

J. Details on the Creation of the Coverage Maps

148. In this *Third Report and Order*, we adopt the proposal to publish aggregated broadband availability data in the Broadband Map that does not distinguish between fixed or mobile data. We also adopt the proposal to create two other maps that identify carrier-specific fixed and mobile coverage data, including reported technologies and speeds by provider. There is no opposition in the record to these proposals. As such, we find that this approach fulfills the requirements of the Broadband DATA Act to depict "the extent of the availability of broadband Internet access service in the United States, without regard to whether that service is fixed broadband Internet access service or mobile broadband Internet access service, which shall be based on data collected by the Commission from all providers."

K. Technical Assistance

149. The Broadband DATA Act requires the Commission to hold annual workshops for Tribal governments in each of the 12 Bureau of Indian Affairs regions. Additionally, the Commission must review the need for continued workshops on an annual basis. In the *Second Order and Third Further*

Notice, the Commission sought comment on implementing provisions of the Broadband DATA Act that require the Commission to provide Tribal governments with technical assistance on the collection and submission of data. The Commission sought comment on the type of technical assistance the Tribes need to help them collect and submit data under the Broadband DATA Act's provision allowing State, local, and Tribal government entities that are primarily responsible for mapping or tracking broadband Internet access service coverage in their areas to provide verified data for use in the coverage maps. The Commission did not receive any comments regarding tribal workshops.

150. We direct OEA and the Office of Native Affairs and Policy to host at least one workshop in each of the 12 Bureau of Indian Affairs regions within one year following adoption of this *Third Report and Order*. The Offices shall publish a public notice announcing the workshop date, time, location, and agenda prior to each workshop. In addition, following the completion of such workshops, OEA and the Office of Native Affairs and Policy shall, in consultation with Indian Tribes, conduct a review of the need for continued annual workshops.

151. The Broadband DATA Act also requires the Commission to establish a process in which a provider that has fewer than 100,000 active broadband Internet access service connections may request and receive assistance from the Commission with respect to GIS data processing to ensure that the provider is able to comply with the Broadband DATA Act in a timely and accurate manner. In the *Second Order and Third Further Notice*, the Commission proposed, subject to receiving adequate funding, to make help-desk support available and to provide clear instructions on the form for the Digital Opportunity Data Collection to aid providers in making their filings. The Commission also sought comment on the extent to which providers will need such technical assistance and any other help that small providers will need to comply with the requirements of the Broadband DATA Act.

152. In response to the *Second Order and Third Further Notice*, Connected Nation suggested that any help-desk solution should include the provision of GIS processing assistance to service providers with fewer than 100,000 active broadband subscriptions. Some commenters recommend that the Commission should, in addition to making help-desk support available, provide small providers with fact sheets, webinars, workshops, and other Digital Opportunity Data Collection education initiatives, flexibility in filing formats, or additional time to file their initial Digital Opportunity Data Collection

reports.

153. We adopt the proposals to make help-desk support available to providers that have fewer than 100,000 active broadband Internet access service connections and to provide clear instructions on the form for the Digital Opportunity Data Collection in order to aid small providers in making their filings. We believe these measures will be of significant help to small providers and decline to make additional provisions for those entities at this time but expect to revisit the need for additional measures after we have begun to implement the Digital Opportunity Data Collection.

154. The Broadband DATA Act also requires the Commission to provide technical assistance to consumers and State, local, and Tribal governmental entities with respect to the challenge process. The Broadband DATA Act requires such technical assistance to include detailed tutorials and webinars and the provision of Commission staff to provide assistance, as needed, throughout the entirety of the challenge process. The Commission sought comment on the type of technical assistance that should be provided to assist with the challenge process, taking into account the lack of funding at that time to implement the Broadband DATA Act. The Commission did not receive any comments on this proposal.

155. We direct OEA and Consumer and Governmental Affairs Bureau to make detailed webinars available to explain the challenge process to consumers and State, local, and Tribal governments. Additionally, we direct the Bureau and Office to make available the names and contact information of Commission staff who are available to assist consumers, state, local, and Tribal governments with the challenge process.

L. Form 477 Reforms

156. In the *Digital Opportunity Data Collection Order and Further Notice*, the Commission made several changes to its collection of mobile voice and broadband subscriber data in order to obtain more granular data and to improve the usefulness of such data. The Commission found that state-level aggregation of subscription data significantly limited its usefulness, and that collection of census-tract level data would substantially improve the Commission's ability to conduct more accurate mobile competition analysis, particularly in secondary market transactions. The Broadband DATA Act, however, directs the Commission to "continue to collect and publicly report subscription data that the Commission collected through the Form 477 broadband deployment service availability process, as in

effect on July 1, 2019.” In the *Second Order and Third Further Notice*, the Commission also proposed to continue the current census-based deployment data collection under Form 477 for at least one reporting cycle after the new granular reporting collection commences and sought comment on sunsetting the fixed broadband deployment aspect of Form 477 and the timing of doing so. In order to adhere to the requirements of the Broadband DATA Act, and to maintain the Commission’s flexibility to make informed decisions as it implements the legislation, we require mobile service providers to report both voice and broadband subscription data under the rules in effect on July 1, 2019, for all future Form 477 submissions. We also refrain from committing to a timeframe for sunsetting the Form 477 deployment collection at this time and will revisit this issue after further implementation of the Digital Opportunity Data Collection enables us to make a more informed decision.

1. Mobile Subscriber Data

157. In the *Second Order and Third Further Notice*, the Commission required mobile providers to submit broadband and voice subscriber information at the census-tract level based on the subscriber’s place of primary use for postpaid subscribers and based on the subscriber’s telephone number for prepaid and resold subscribers. This new collection of subscription data was to take effect for Form 477 submissions filed on June 30, 2020. The mobile subscription reporting requirements under the *Digital Opportunity Data Collection Order and Further Notice* were subject to approval by OMB and would have been effective 30 days after the announcement in the **Federal Register** of OMB approval. OMB approved the collection on March 27, 2020, but the Commission did not publish the approval in the **Federal Register** given the recent enactment of the Broadband DATA Act. The *Second Order and Third Further Notice* requested comment on the Commission’s proposed interpretation of the Broadband DATA Act requiring the collection of Form 477 subscription information in effect on July 1, 2019. In response to the *Second Order and Third Further Notice*, AT&T contends that the plain language of the Broadband DATA Act requires the Commission to revert to the Form 477 broadband subscription requirements in effect on July 1, 2019. Similarly, AT&T argues that the Commission should also apply these changes to the collection requirements for mobile voice subscription data to ensure consistent reporting processes and to avoid confusion.

158. We find that the language in the Broadband DATA Act requires the collection of Form

477 subscription information pursuant to the rules in effect on July 1, 2019, which is prior to the Commission’s adoption of the August 2019 *Digital Opportunity Data Collection Order and Further Notice*. We therefore require mobile providers to report both voice and broadband subscription data under the rules in effect on July 1, 2019, for all future Form 477 submissions. While the Broadband DATA Act generally addresses reporting requirements for broadband and not voice service, in order to avoid having inconsistent reporting requirements for mobile broadband and voice subscriptions, we find that, going forward, both mobile voice and broadband subscriber data must be reported under the Form 477 rules in effect on July 1, 2019. The Commission did not adopt any changes to fixed subscriber data in the *Second Order and Third Further Notice*.

2. Sunsetting Form 477 Census Block Reporting for Fixed Providers

159. In the *Second Order and Third Further Notice*, the Commission proposed to continue the current census-based deployment data collection under Form 477 for at least one reporting cycle after the new granular reporting collection commences and sought comment on sunsetting the fixed broadband deployment aspect of Form 477 and the timing of doing so. Several commenters support a set timeframe for sunsetting Form 477 fixed deployment reporting, ranging from immediately to one year—or two reporting cycles—after the initiation of the Digital Opportunity Data Collection, including the Fabric. Others urge a more flexible approach. For example, Connected2Fiber argues that the Commission should adopt a more open-ended approach to allow time to compare data from both collections and allow for corrections to the new data. The City of New York further expresses opposition to discontinuing the Form 477 fixed deployment data collection until the Digital Opportunity Data Collection is “well established.”

160. Accordingly, we adopt the proposal from the *Second Order and Third Further Notice* to continue census-based deployment data collection under Form 477 for at least one reporting cycle after the new granular reporting collection commences, but defer consideration of how many cycles after further implementation of the Digital Opportunity Data Collection. We agree with Connected2Fiber and the City of New York that we should not adopt a set timeframe for discontinuing the Form 477 fixed deployment collection. It is vital that the Commission have access to current broadband deployment data. We expect the Digital Opportunity Data Collection deployment data to be a substantial improvement over

the current Form 477 data. The Digital Opportunity Data Collection is an entirely new collection, however, and we cannot predict at this point, before we have begun to implement it, when it will yield consistently useful data.

M. Rules Adopted Prior to Passage of Broadband DATA Act

161. We note that the *Digital Opportunity Data Collection Order and Further Notice* adopted new rules for the Digital Opportunity Data Collection for inclusion in sections 54.1400-54.1403 of the Commission's rules. We are not deleting the Part 1 and Part 43 rule changes adopted in the *Digital Opportunity Data Collection Order and Further Notice* regarding reporting data on Form 477. In addition, we placed the Digital Opportunity Data Collection rules adopted in the *Digital Opportunity Data Collection Order and Further Notice* in Part 54 of the Commission's rules because of the emphasis on advancing our universal service goals and the planned role that USAC would play in the administration of the Digital Opportunity Data Collection. Without a role for USAC, the rules related to the Digital Opportunity Data Collection are a better fit in Part 1 with the other rules related to broadband data collection. The *Digital Opportunity Data Collection Order and Further Notice* provided that such rules would not be effective until 30 days after announcement in the **Federal Register** that the Office of Management and Budget (OMB) approved the new or modified information collection requirements associated with those rules.

162. However, key provisions in the Part 54 rules adopted in the *Digital Opportunity Data Collection Order and Further Notice* are inconsistent with provisions of the Broadband DATA Act. For example, section 54.1400 (Purpose) and other sections of the rules adopted would have established a role for USAC, which is inconsistent with Congress's prohibition on delegating certain responsibilities to third parties including USAC. In addition, section 54.1401 (Frequency of reports) is inconsistent with the semiannual collection requirement in the Broadband DATA Act. As a result of these inconsistencies, we will not be seeking OMB approval for the Part 54 rules adopted in the *Digital Opportunity Data Collection Order and Further Notice*, and we repeal those rules and find there is good cause to do so without notice and comment because they are inconsistent with the Broadband DATA Act. Accordingly, we delete 47 CFR 54.1400 - 54.1403.

IV. FINAL REGULATORY FLEXIBILITY ANALYSIS

163. As required by the Regulatory Flexibility Act of 1980, as amended (RFA) an Initial Regulatory Flexibility Analysis (IRFA) was incorporated in the *Second Order and Third Further Notice* released in July 2020 in this proceeding. The Commission sought written public comment on the proposals in the *Third Notice*, including comments on the IRFA. The Commission did not receive comments specifically directed as a response to the IRFA. However, the Coalition of Rural Wireless Carriers filed reply comments raising issues pertaining to small entities and the IRFA. This present Final Regulatory Flexibility Analysis (FRFA) conforms to the RFA.

A. Need for, and Objectives of, the *Third Report and Order*

164. With the *Third Report and Order*, the Commission takes steps to adopt certain requirements mandated by the Broadband DATA Act, as well as adopting improvements to the collection of data as part of the Digital Opportunity Data Collection. Specifically, we specify which broadband Internet access service providers are required to report availability data, limiting the requirements only to facilities-based providers with reporting on a semiannual basis. We also require fixed providers to report the availability of mass-market broadband Internet access services on the basis of whether the services are residential or business in nature. In addition, we adopt speed thresholds for reporting fixed services and require reporting on latency for fixed technologies.

165. With regard to reporting by mobile broadband Internet access services providers, we require for each 4G LTE or 5G-NR propagation map that a provider submits, a second set of maps showing Reference Signal Received Power (RSRP) signal levels from each active cell site that the Commission may use to prepare “heat maps” showing signal strength levels. Further, we require mobile service providers to submit, on a case-by-case basis, their choice of either infrastructure information or on-the-ground test data as part of the Commission’s investigation and verification of a mobile service provider’s coverage data. In addition, we adopt a user-friendly challenge process for mobile data coverage map submissions, and we require mobile providers to report both voice and broadband subscription data under the rules in effect on July 1, 2019, for all future Form 477 submissions.

166. The Commission also adopts further measures to verify, challenge, and supplement the broadband availability data filed by providers. In particular, we create standards for collecting broadband data from State, local, and Tribal mapping entities and third parties that meet certain criteria, and adopt

user-friendly processes for challenges to fixed broadband coverage submissions and to the data in the broadband serviceable location fabric (Fabric) adopted in the *Second Order and Third Further Notice*. Additionally, we adopt standards for identifying “broadband serviceable” locations in the Fabric, subject to further refinement in the competitive bidding process for that platform. We also establish standards for enforcement of filing requirements consistent with the applicable provisions of the Broadband DATA Act. Finally, we take steps to provide for continuity with the Form 477 data collection as we transition to the Digital Opportunity Data Collection. We believe our actions in the *Third Report and Order* will increase the usefulness of broadband deployment data made available to the Commission, Congress, the industry, and the public, and satisfy the requirements of the Broadband DATA Act.

B. Summary of Significant Issues Raised by Public Comments in Response to the IRFA

167. The Coalition of Rural Wireless Carriers filed reply comments asserting that additional mapping, drive testing, and the disclosure of detailed infrastructure information would impose additional burdens on small providers and that the Commission did not present significant alternatives in the IRFA to minimize any significant economic impact of the new rules on small entities. While we note the concerns in the Coalition of Rural Wireless Carriers, the Commission’s actions in this *Third Report and Order* are primarily in response to the legislative enactment of the Broadband DATA Act, leaving us limited discretion in the adoption of our broadband mapping rules. To the extent we do have discretion in implementing our rules, we used such discretion to develop better quality, more useful, and more granular reporting of broadband deployment data. We believe that the recordkeeping, reporting, and other compliance requirements adopted in the *Third Report and Order* strike a balance between providing small and other affected entities some flexibility in reporting data while allowing the Commission to obtain the necessary information to meet its obligations under the Broadband DATA Act. In Section E below, we discuss alternatives we considered, but declined to adopt, that would have increased the costs and/or burdens on small entities.

C. Response to Comments by the Chief Counsel for Advocacy of the Small Business Administration

168. Pursuant to the Small Business Jobs Act of 2010, which amended the RFA, the Commission is required to respond to any comments filed by the Chief Counsel for Advocacy of the

Small Business Administration (SBA) and to provide a detailed statement of any change made to the proposed rules as a result of those comments.

169. The Chief Counsel did not file comments in response to the proposed rules in this proceeding.

D. Description and Estimate of the Number of Small Entities to Which the Rules Will Apply

170. The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the rules adopted herein. The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction.” In addition, the term “small business” has the same meaning as the term “small-business concern” under the Small Business Act.” A “small-business concern” is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the SBA.

171. *Small Businesses, Small Organizations, Small Governmental Jurisdictions.* Our actions, over time, may affect small entities that are not easily categorized at present. We therefore describe here, at the outset, three broad groups of small entities that could be directly affected herein. First, while there are industry specific size standards for small businesses that are used in the regulatory flexibility analysis, according to data from the Small Business Administration’s (SBA) Office of Advocacy, in general a small business is an independent business having fewer than 500 employees. These types of small businesses represent 99.9% of all businesses in the United States, which translates to 30.7 million businesses.

172. Next, the type of small entity described as a “small organization” is generally “any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.” The Internal Revenue Service (IRS) uses a revenue benchmark of \$50,000 or less to delineate its annual electronic filing requirements for small exempt organizations. Nationwide, for tax year 2018, there were approximately 571,709 small exempt organizations in the U.S. reporting revenues of \$50,000 or less according to the registration and tax data for exempt organizations available from the IRS.

173. Finally, the small entity described as a “small governmental jurisdiction” is defined

generally as “governments of cities, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand.” U.S. Census Bureau data from the 2017 Census of Governments indicate that there were 90,075 local governmental jurisdictions consisting of general purpose governments and special purpose governments in the United States. Of this number there were 36,931 general purpose governments (county, municipal, and town or township) with populations of less than 50,000 and 12,040 special purpose governments - independent school districts with enrollment populations of less than 50,000. Accordingly, based on the 2017 U.S. Census of Governments data, we estimate that at least 48,971 entities fall into the category of “small governmental jurisdictions.”

1. Broadband Internet Access Service Providers

174. The broadband Internet access service provider industry has changed since the definition was introduced in 2007. The data cited below may therefore include entities that no longer provide broadband Internet access service and may exclude entities that now provide such service. To ensure that this FRFA describes the universe of small entities that our action might affect, we discuss in turn several different types of entities that might be providing broadband Internet access service. We note that, although we have no specific information on the number of small entities that provide broadband Internet access service over unlicensed spectrum, we included these entities in our Initial Regulatory Flexibility Analysis.

175. *Internet Service Providers (Broadband).* Broadband Internet service providers include wired (e.g., cable, DSL) and VoIP service providers using their own operated wired telecommunications infrastructure and fall in the category of Wired Telecommunication Carriers. Wired Telecommunications Carriers are comprised of establishments primarily engaged in operating and/or providing access to transmission facilities and infrastructure that they own and/or lease for the transmission of voice, data, text, sound, and video using wired telecommunications networks. Transmission facilities may be based on a single technology or a combination of technologies. The SBA size standard for this category classifies a business as small if it has 1,500 or fewer employees. U.S. Census Bureau data for 2012 show that there were 3,117 firms that operated that year. Of this total, 3,083 operated with fewer than 1,000 employees. Consequently, under this size standard the majority of firms in this industry can be considered small.

176. *Internet Service Providers (Non-Broadband)*. Internet access service providers such as Dial-up Internet service providers, VoIP service providers using client-supplied telecommunications connections, and Internet service providers using client-supplied telecommunications connections (e.g., dial-up ISPs) fall in the category of All Other Telecommunications. The SBA has developed a small business size standard for All Other Telecommunications, which consists of all such firms with gross annual receipts of \$35 million or less. For this category, U.S. Census Bureau data for 2012 show that there were 1,442 firms that operated for the entire year. Of these firms, a total of 1,400 had gross annual receipts of less than \$25 million. Consequently, under this size standard a majority of firms in this industry can be considered small.

2. Wireline Providers

177. *Wired Telecommunications Carriers*. The U.S. Census Bureau defines this industry as “establishments primarily engaged in operating and/or providing access to transmission facilities and infrastructure that they own and/or lease for the transmission of voice, data, text, sound, and video using wired communications networks. Transmission facilities may be based on a single technology or a combination of technologies. Establishments in this industry use the wired telecommunications network facilities that they operate to provide a variety of services, such as wired telephony services, including VoIP services, wired (cable) audio and video programming distribution, and wired broadband Internet services. By exception, establishments providing satellite television distribution services using facilities and infrastructure that they operate are included in this industry.” The SBA has developed a small business size standard for Wired Telecommunications Carriers, which consists of all such companies having 1,500 or fewer employees. U.S. Census Bureau data for 2012 show that there were 3,117 firms that operated that year. Of this total, 3,083 operated with fewer than 1,000 employees. Thus, under this size standard, the majority of firms in this industry can be considered small.

178. *Local Exchange Carriers (LECs)*. Neither the Commission nor the SBA has developed a size standard for small businesses specifically applicable to local exchange services. The closest applicable NAICS Code category is Wired Telecommunications Carriers. Under the applicable SBA size standard, such a business is small if it has 1,500 or fewer employees. According to Commission data, U.S. Census Bureau data for 2012 show that there were 3,117 firms that operated that year. Of this total,

3,083 operated with fewer than 1,000 employees. Thus under this category and the associated size standard, the Commission estimates that the majority of local exchange carriers are small entities.

179. *Incumbent Local Exchange Carriers (Incumbent LECs).* Neither the Commission nor the SBA has developed a small business size standard specifically for incumbent local exchange services. The closest applicable NAICS Code category is Wired Telecommunications Carriers. Under the applicable SBA size standard, such a business is small if it has 1,500 or fewer employees. According to U.S. Census Bureau data for 2012, 3,117 firms operated in that year. Of this total, 3,083 operated with fewer than 1,000 employees. Consequently, the Commission estimates that most providers of incumbent local exchange service are small businesses that may be affected by our actions. According to Commission data, 1,307 Incumbent LECs reported that they were incumbent local exchange service providers. Of this total, an estimated 1,006 have 1,500 or fewer employees. Thus, using the SBA's size standard, the majority of Incumbent LECs can be considered small entities.

180. *Competitive Local Exchange Carriers (Competitive LECs), Competitive Access Providers (CAPs), Shared-Tenant Service Providers, and Other Local Service Providers.* Neither the Commission nor the SBA has developed a small business size standard specifically for these service providers. The appropriate NAICS Code category is Wired Telecommunications Carriers and under that size standard, such a business is small if it has 1,500 or fewer employees. U.S. Census Bureau data for 2012 indicate that 3,117 firms operated during that year. Of that number, 3,083 operated with fewer than 1,000 employees. Based on these data, the Commission concludes that the majority of Competitive LECs, CAPs, Shared-Tenant Service Providers, and Other Local Service Providers, are small entities. According to Commission data, 1,442 carriers reported that they were engaged in the provision of either competitive local exchange services or competitive access provider services. Of these 1,442 carriers, an estimated 1,256 have 1,500 or fewer employees. In addition, 17 carriers have reported that they are Shared-Tenant Service Providers, and all 17 are estimated to have 1,500 or fewer employees. Also, 72 carriers have reported that they are Other Local Service Providers. Of this total, 70 have 1,500 or fewer employees. Consequently, based on internally researched data, the Commission estimates that most providers of competitive local exchange service, competitive access providers, Shared-Tenant Service Providers, and Other Local Service Providers are small entities.

181. *Interexchange Carriers (IXCs)*. Neither the Commission nor the SBA has developed a small business size standard specifically for Interexchange Carriers. The closest NAICS Code category is Wired Telecommunications Carriers. The applicable size standard under SBA rules consists of all such companies having 1,500 or fewer employees. U.S. Census Bureau data for 2012 indicate that 3,117 firms operated during that year. Of that number, 3,083 operated with fewer than 1,000 employees. According to internally developed Commission data, 359 companies reported that their primary telecommunications service activity was the provision of interexchange services. Of this total, an estimated 317 have 1,500 or fewer employees. Consequently, the Commission estimates that the majority of interexchange service providers are small entities.

182. *Operator Service Providers (OSPs)*. Neither the Commission nor the SBA has developed a small business size standard specifically for operator service providers. The closest applicable size standard under SBA rules is the category of Wired Telecommunications Carriers. Under that size standard such a business is small if it has 1,500 or fewer employees. U.S. Census Bureau data for 2012 show that there were 3,117 firms that operated that year. Of this total, 3,083 operated with fewer than 1,000 employees. Thus under this size standard, the Commission estimates that the majority of firms in this industry can be considered small. According to Commission data, 33 carriers have reported that they are engaged in the provision of operator services. Of these, an estimated 31 have 1,500 or fewer employees and 2 have more than 1,500 employees. Consequently, the Commission estimates that the majority of OSPs are small entities.

183. *Other Toll Carriers*. Neither the Commission nor the SBA has developed a definition for small businesses specifically applicable to Other Toll Carriers. This category includes toll carriers that do not fall within the categories of interexchange carriers, operator service providers, prepaid calling card providers, satellite service carriers, or toll resellers. The closest applicable size standard under SBA rules is for Wired Telecommunications Carriers. The applicable SBA size standard consists of all such companies having 1,500 or fewer employees. U.S. Census Bureau data for 2012 indicate that 3,117 firms operated during that year. Of that number, 3,083 operated with fewer than 1,000 employees. Thus, under this category and the associated small business size standard, the majority of Other Toll Carriers can be considered small. According to internally developed Commission data, 284 companies reported that their

primary telecommunications service activity was the provision of other toll carriage. Of these, an estimated 279 have 1,500 or fewer employees. Consequently, the Commission estimates that most Other Toll Carriers are small entities.

3. Wireless Providers—Fixed and Mobile

184. The broadband Internet access service provider category covered by these new rules may cover multiple wireless firms and categories of regulated wireless services. Thus, to the extent the wireless services listed below are used by wireless firms for broadband Internet access service, the actions may have an impact on those small businesses as set forth above and further below. In addition, for those services subject to auctions, we note that, as a general matter, the number of winning bidders that claim to qualify as small businesses at the close of an auction does not necessarily represent the number of small businesses currently in service. Also, the Commission does not generally track subsequent business size unless, in the context of assignments and transfers or reportable eligibility events, unjust enrichment issues are implicated.

185. *Wireless Telecommunications Carriers (except Satellite)*. This industry comprises establishments engaged in operating and maintaining switching and transmission facilities to provide communications via the airwaves. Establishments in this industry have spectrum licenses and provide services using that spectrum, such as cellular services, paging services, wireless Internet access, and wireless video services. The appropriate size standard under SBA rules is that such a business is small if it has 1,500 or fewer employees. For this industry, U.S. Census Bureau data for 2012 show that there were 967 firms that operated for the entire year. Of this total, 955 firms had employment of 999 or fewer employees and 12 had employment of 1000 employees or more. Thus, under this category and the associated size standard, the Commission estimates that the majority of Wireless Telecommunications Carriers (except Satellite) are small entities.

186. The Commission's own data—available in its Universal Licensing System—indicate that, as of August 31, 2018, there are 265 Cellular licensees that will be affected by our actions. The Commission does not know how many of these licensees are small, as the Commission does not collect that information for these types of entities. Similarly, according to internally-developed Commission data, 413 carriers reported that they were engaged in the provision of wireless telephony, including

cellular service, Personal Communications Service (PCS), and Specialized Mobile Radio (SMR) Telephony services. Of this total, an estimated 261 have 1,500 or fewer employees, and 152 have more than 1,500 employees. Thus, using available data, we estimate that the majority of wireless firms can be considered small.

187. *Wireless Communications Services.* This service can be used for fixed, mobile, radiolocation, and digital audio broadcasting satellite uses. The Commission defined “small business” for the wireless communications services (WCS) auction as an entity with average gross revenues of \$40 million for each of the three preceding years, and a “very small business” as an entity with average gross revenues of \$15 million for each of the three preceding years. The SBA has approved these small business size standards. In the Commission’s auction for geographic area licenses in the WCS, there were seven winning bidders that qualified as “very small business” entities and one that qualified as a “small business” entity.

188. *1670–1675 MHz Services.* This service can be used for fixed and mobile uses, except aeronautical mobile. An auction for one license in the 1670–1675 MHz band was conducted in 2003. One license was awarded. The winning bidder was not a small entity.

189. *Wireless Telephony.* Wireless telephony includes cellular, personal communications services, and specialized mobile radio telephony carriers. The closest applicable SBA category is Wireless Telecommunications Carriers (except Satellite). Under the SBA small business size standard, a business is small if it has 1,500 or fewer employees. For this industry, U.S. Census Bureau data for 2012 show that there were 967 firms that operated for the entire year. Of this total, 955 firms had fewer than 1,000 employees and 12 firms had 1000 employees or more. Thus, under this category and the associated size standard, the Commission estimates that a majority of these entities can be considered small. According to Commission data, 413 carriers reported that they were engaged in wireless telephony. Of these, an estimated 261 have 1,500 or fewer employees and 152 have more than 1,500 employees. Therefore, more than half of these entities can be considered small.

190. *Broadband Personal Communications Service.* The broadband personal communications services (PCS) spectrum is divided into six frequency blocks designated A through F, and the Commission has held auctions for each block. The Commission initially defined a “small business” for

C- and F-Block licenses as an entity that has average gross revenues of \$40 million or less in the three previous calendar years. For F-Block licenses, an additional small business size standard for “very small business” was added and is defined as an entity that, together with its affiliates, has average gross revenues of not more than \$15 million for the preceding three calendar years. These standards, defining “small entity” in the context of broadband PCS auctions, have been approved by the SBA. No small businesses within the SBA-approved small business size standards bid successfully for licenses in Blocks A and B. There were 90 winning bidders that claimed small business status in the first two C-Block auctions. A total of 93 bidders that claimed small business status won approximately 40% of the 1,479 licenses in the first auction for the D, E, and F Blocks. On April 15, 1999, the Commission completed the reauction of 347 C-, D-, E-, and F-Block licenses in Auction No. 22. Of the 57 winning bidders in that auction, 48 claimed small business status and won 277 licenses.

191. On January 26, 2001, the Commission completed the auction of 422 C and F Block Broadband PCS licenses in Auction No. 35. Of the 35 winning bidders in that auction, 29 claimed small business status. Subsequent events concerning Auction 35, including judicial and agency determinations, resulted in a total of 163 C and F Block licenses being available for grant. On February 15, 2005, the Commission completed an auction of 242 C-, D-, E-, and F-Block licenses in Auction No. 58. Of the 24 winning bidders in that auction, 16 claimed small business status and won 156 licenses. On May 21, 2007, the Commission completed an auction of 33 licenses in the A, C, and F Blocks in Auction No. 71. Of the 12 winning bidders in that auction, five claimed small business status and won 18 licenses. On August 20, 2008, the Commission completed the auction of 20 C-, D-, E-, and F-Block Broadband PCS licenses in Auction No. 78. Of the eight winning bidders for Broadband PCS licenses in that auction, six claimed small business status and won 14 licenses.

192. *Specialized Mobile Radio Licenses.* The Commission awards “small entity” bidding credits in auctions for Specialized Mobile Radio (SMR) geographic area licenses in the 800 MHz and 900 MHz bands to firms that had revenues of no more than \$15 million in each of the three previous calendar years. The Commission awards “very small entity” bidding credits to firms that had revenues of no more than \$3 million in each of the three previous calendar years. The SBA has approved these small business size standards for the 900 MHz Service. The Commission has held auctions for geographic area licenses

in the 800 MHz and 900 MHz bands. The 900 MHz SMR auction began on December 5, 1995, and closed on April 15, 1996. Sixty bidders claiming that they qualified as small businesses under the \$15 million size standard won 263 geographic area licenses in the 900 MHz SMR band. The 800 MHz SMR auction for the upper 200 channels began on October 28, 1997, and was completed on December 8, 1997. Ten bidders claiming that they qualified as small businesses under the \$15 million size standard won 38 geographic area licenses for the upper 200 channels in the 800 MHz SMR band. A second auction for the 800 MHz band conducted in 2002 and included 23 BEA licenses. One bidder claiming small business status won five licenses.

193. The auction of the 1,053 800 MHz SMR geographic area licenses for the General Category channels was conducted in 2000. Eleven bidders won 108 geographic area licenses for the General Category channels in the 800 MHz SMR band and qualified as small businesses under the \$15 million size standard. In an auction completed in 2000, a total of 2,800 Economic Area licenses in the lower 80 channels of the 800 MHz SMR service were awarded. Of the 22 winning bidders, 19 claimed small business status and won 129 licenses. Thus, combining all four auctions, 41 winning bidders for geographic licenses in the 800 MHz SMR band claimed status as small businesses.

194. In addition, there are numerous incumbent site-by-site SMR licenses and licensees with extended implementation authorizations in the 800 and 900 MHz bands. We do not know how many firms provide 800 MHz or 900 MHz geographic area SMR service pursuant to extended implementation authorizations, nor how many of these providers have annual revenues of no more than \$15 million. One firm has over \$15 million in revenues. In addition, we do not know how many of these firms have 1,500 or fewer employees, which is the SBA-determined size standard. We assume, for purposes of this analysis, that all of the remaining extended implementation authorizations are held by small entities, as defined by the SBA.

195. *Lower 700 MHz Band Licenses.* The Commission previously adopted criteria for defining three groups of small businesses for purposes of determining their eligibility for special provisions such as bidding credits. The Commission defined a “small business” as an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding \$40 million for the preceding three years. A “very small business” is defined as an entity that, together with its affiliates and

controlling principals, has average gross revenues that are not more than \$15 million for the preceding three years. Additionally, the lower 700 MHz Service had a third category of small business status for Metropolitan/Rural Service Area (MSA/RSA) licenses—“entrepreneur”—which is defined as an entity that, together with its affiliates and controlling principals, has average gross revenues that are not more than \$3 million for the preceding three years. The SBA approved these small size standards. An auction of 740 licenses (one license in each of the 734 MSAs/RSAs and one license in each of the six Economic Area Groupings (EAGs)) commenced on August 27, 2002, and closed on September 18, 2002. Of the 740 licenses available for auction, 484 licenses were won by 102 winning bidders. Seventy-two of the winning bidders claimed small business, very small business, or entrepreneur status and won a total of 329 licenses. A second auction commenced on May 28, 2003, closed on June 13, 2003, and included 256 licenses: 5 EAG licenses and 476 Cellular Market Area licenses. Seventeen winning bidders claimed small or very small business status and won 60 licenses, and nine winning bidders claimed entrepreneur status and won 154 licenses. On July 26, 2005, the Commission completed an auction of 5 licenses in the Lower 700 MHz band (Auction No. 60). There were three winning bidders for five licenses. All three winning bidders claimed small business status.

196. In 2007, the Commission reexamined its rules governing the 700 MHz band in the *700 MHz Second Report and Order*. An auction of 700 MHz licenses commenced January 24, 2008 and closed on March 18, 2008, which included, 176 Economic Area licenses in the A Block, 734 Cellular Market Area licenses in the B Block, and 176 EA licenses in the E Block. Twenty winning bidders, claiming small business status (those with attributable average annual gross revenues that exceed \$15 million and do not exceed \$40 million for the preceding three years) won 49 licenses. Thirty-three winning bidders claiming very small business status (those with attributable average annual gross revenues that do not exceed \$15 million for the preceding three years) won 325 licenses.

197. *Upper 700 MHz Band Licenses.* In the *700 MHz Second Report and Order*, the Commission revised its rules regarding Upper 700 MHz licenses. On January 24, 2008, the Commission commenced Auction 73 in which several licenses in the Upper 700 MHz band were available for licensing: 12 Regional Economic Area Grouping licenses in the C Block and one nationwide license in the D Block. The auction concluded on March 18, 2008, with three winning bidders claiming very small

business status (those with attributable average annual gross revenues that do not exceed \$15 million for the preceding three years) and winning five licenses.

198. *700 MHz Guard Band Licensees.* In 2000, in the *700 MHz Guard Band Order*, the Commission adopted size standards for “small businesses” and “very small businesses” for purposes of determining their eligibility for special provisions such as bidding credits and installment payments. A small business in this service is an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding \$40 million for the preceding three years. Additionally, a very small business is an entity that, together with its affiliates and controlling principals, has average gross revenues that are not more than \$15 million for the preceding three years. SBA approval of these definitions is not required. An auction of 52 Major Economic Area licenses commenced on September 6, 2000, and closed on September 21, 2000. Of the 104 licenses auctioned, 96 licenses were sold to nine bidders. Five of these bidders were small businesses that won a total of 26 licenses. A second auction of 700 MHz Guard Band licenses commenced on February 13, 2001, and closed on February 21, 2001. All eight of the licenses auctioned were sold to three bidders. One of these bidders was a small business that won a total of two licenses.

199. *Air-Ground Radiotelephone Service.* The Commission has previously used the SBA’s small business size standard applicable to Wireless Telecommunications Carriers (except Satellite). The appropriate size standard under SBA rules is that such a business is small if it has 1,500 or fewer employees. For this industry, U.S. Census Bureau data for 2012 show that there were 967 firms that operated for the entire year. Of this total, 955 firms had fewer than 1,000 employees and 12 had employment of 1,000 employees or more. There are approximately 100 licensees in the Air-Ground Radiotelephone Service, and we estimate that almost all of them qualify as small entities under the SBA definition.

200. For purposes of assigning Air-Ground Radiotelephone Service licenses through competitive bidding, the Commission has defined “small business” as an entity that, together with controlling interests and affiliates, has average annual gross revenues for the preceding three years not exceeding \$40 million. A “very small business” is defined as an entity that, together with controlling interests and affiliates, has average annual gross revenues for the preceding three years not exceeding \$15

million. These definitions were approved by the SBA. In May 2006, the Commission completed an auction of nationwide commercial Air-Ground Radiotelephone Service licenses in the 800 MHz band (Auction No. 65). On June 2, 2006, the auction closed with two winning bidders winning two Air-Ground Radiotelephone Services licenses. Neither of the winning bidders claimed small business status.

201. Advanced Wireless Services (AWS (1710–1755 MHz and 2110–2155 MHz bands (AWS-1); 1915–1920 MHz, 1995–2000 MHz, 2020–2025 MHz and 2175–2180 MHz bands (AWS-2); 2155–2175 MHz band (AWS-3)). For the AWS-1 bands, the Commission has defined a “small business” as an entity with average annual gross revenues for the preceding three years not exceeding \$40 million, and a “very small business” as an entity with average annual gross revenues for the preceding three years not exceeding \$15 million. For AWS-2 and AWS-3, although we do not know for certain which entities are likely to apply for these frequencies, we note that the AWS-1 bands are comparable to those used for cellular service and personal communications service. The Commission has not yet adopted size standards for the AWS-2 or AWS-3 bands but proposes to treat both AWS-2 and AWS-3 similarly to broadband PCS service and AWS-1 service due to the comparable capital requirements and other factors, such as issues involved in relocating incumbents and developing markets, technologies, and services.

202. *3650–3700 MHz Band.* In March 2005, the Commission released a *Report and Order and Memorandum Opinion and Order* that provides for nationwide, non-exclusive licensing of terrestrial operations, using contention-based technologies, in the 3650 MHz band (i.e., 3650–3700 MHz). As of April 2010, more than 1,270 licenses have been granted and more than 7,433 sites have been registered. The Commission has not developed a definition of small entities applicable to 3650–3700 MHz band nationwide, non-exclusive licenses. However, we estimate that the majority of these licensees are Internet Access Service Providers (ISPs) and that most of those licensees are small businesses.

203. *Fixed Microwave Services.* Microwave services include common carrier, private-operational fixed, and broadcast auxiliary radio services. They also include the Upper Microwave Flexible Use Service, Millimeter Wave Service, Local Multipoint Distribution Service (LMDS), the Digital Electronic Message Service (DEMS), and the 24 GHz Service, where licensees can choose between common carrier and non-common carrier status. There are approximately 66,680 common carrier fixed licensees and 69,360 private and public safety operational-fixed licensees, 20,150 broadcast

auxiliary radio licensees, 411 LMDS licenses, 33 24 GHz DEMS licenses, 777 39 GHz licenses, and five 24 GHz licenses, and 467 Millimeter Wave licenses in the microwave services. The Commission has not yet defined a small business with respect to microwave services. The closest applicable SBA category is Wireless Telecommunications Carriers (except Satellite) and the appropriate size standard for this category under SBA rules is that such a business is small if it has 1,500 or fewer employees. For this industry, U.S. Census Bureau data for 2012 show that there were 967 firms that operated for the entire year. Of this total, 955 firms had fewer than 1,000 employees and 12 had employment of 1,000 employees or more. Thus, under this SBA category and the associated size standard, the Commission estimates that a majority of fixed microwave service licensees can be considered small.

204. The Commission does not have data specifying the number of these licensees that have more than 1,500 employees, and thus is unable at this time to estimate with greater precision the number of fixed microwave service licensees that would qualify as small business concerns under the SBA's small business size standard. Consequently, the Commission estimates that there are up to 36,708 common carrier fixed licensees and up to 59,291 private operational-fixed licensees and broadcast auxiliary radio licensees in the microwave services that may be small and may be affected by the rules and policies adopted herein. We note, however, that the common carrier microwave fixed licensee category includes some large entities.

205. *Broadband Radio Service and Educational Broadband Service.* Broadband Radio Service systems, previously referred to as Multipoint Distribution Service (MDS) and Multichannel Multipoint Distribution Service (MMDS) systems and "wireless cable," transmit video programming to subscribers and provide two-way high-speed data operations using the microwave frequencies of the Broadband Radio Service (BRS) and Educational Broadband Service (EBS) (previously referred to as the Instructional Television Fixed Service (ITFS)).

206. *BRS*— In connection with the 1996 BRS auction, the Commission established a small business size standard as an entity that had annual average gross revenues of no more than \$40 million in the previous three calendar years. The BRS auctions resulted in 67 successful bidders obtaining licensing opportunities for 493 Basic Trading Areas (BTAs). Of the 67 auction winners, 61 met the definition of a small business. BRS also includes licensees of stations authorized prior to the auction. At this time, we

estimate that of the 61 small business BRS auction winners, 48 remain small business licensees. In addition to the 48 small businesses that hold BTA authorizations, there are approximately 86 incumbent BRS licensees that are considered small entities (18 incumbent BRS licensees do not meet the small business size standard). After adding the number of small business auction licensees to the number of incumbent licensees not already counted, we find that there are currently approximately 133 BRS licensees that are defined as small businesses under either the SBA or the Commission's rules.

207. In 2009, the Commission conducted Auction 86, the sale of 78 licenses in the BRS areas. The Commission offered three levels of bidding credits: (1) a bidder with attributed average annual gross revenues that exceed \$15 million and do not exceed \$40 million for the preceding three years (small business) received a 15% discount on its winning bid; (2) a bidder with attributed average annual gross revenues that exceed \$3 million and do not exceed \$15 million for the preceding three years (very small business) received a 25% discount on its winning bid; and (3) a bidder with attributed average annual gross revenues that do not exceed \$3 million for the preceding three years (entrepreneur) received a 35% discount on its winning bid. Auction 86 concluded in 2009 with the sale of 61 licenses. Of the ten winning bidders, two bidders that claimed small business status won four licenses; one bidder that claimed very small business status won three licenses; and two bidders that claimed entrepreneur status won six licenses.

208. *EBS*— Educational Broadband Service has been included within the broad economic census category and SBA size standard for Wired Telecommunications Carriers since 2007. Wired Telecommunications Carriers are comprised of establishments primarily engaged in operating and/or providing access to transmission facilities and infrastructure that they own and/or lease for the transmission of voice, data, text, sound, and video using wired telecommunications networks. Transmission facilities may be based on a single technology or a combination of technologies.” The SBA's small business size standard for this category is all such firms having 1,500 or fewer employees. U.S. Census Bureau data for 2012 show that there were 3,117 firms that operated that year. Of this total, 3,083 operated with fewer than 1,000 employees. Thus, under this size standard, the majority of firms in this industry can be considered small.

209. In addition to U.S. Census Bureau data, the Commission's Universal Licensing System

indicates that as of March 2019 there were 1,300 licensees holding over 2,190 active EBS licenses. The Commission estimates that of these 2,190 licenses, the majority are held by non-profit educational institutions and school districts, which are by statute defined as small businesses.

4. Satellite Service Providers

210. *Satellite Telecommunications.* This category comprises firms “primarily engaged in providing telecommunications services to other establishments in the telecommunications and broadcasting industries by forwarding and receiving communications signals via a system of satellites or reselling satellite telecommunications.” Satellite telecommunications service providers include satellite and earth station operators. The category has a small business size standard of \$35 million or less in average annual receipts, under SBA rules. For this category, U.S. Census Bureau data for 2012 show that a total of 333 firms operated for the entire year. Of this total, 299 firms had annual receipts of less than \$25 million. Consequently, we estimate that the majority of satellite telecommunications providers are small entities.

211. *All Other Telecommunications.* The “All Other Telecommunications” category is comprised of establishments that are primarily engaged in providing specialized telecommunications services, such as satellite tracking, communications telemetry, and radar station operation. This industry also includes establishments primarily engaged in providing satellite terminal stations and associated facilities connected with one or more terrestrial systems and capable of transmitting telecommunications to, and receiving telecommunications from, satellite systems. Establishments providing Internet services or voice over Internet protocol (VoIP) services via client-supplied telecommunications connections are also included in this industry. The SBA has developed a small business size standard for “All Other Telecommunications,” which consists of all such firms with gross annual receipts of \$35 million or less. For this category, U.S. Census Bureau data for 2012 show that there were 1,442 firms that operated for the entire year. Of these firms, a total of 1,400 had gross annual receipts of less than \$25 million and 15 firms had annual receipts of \$25 million to \$49, 999,999. Thus, the Commission estimates that the majority of “All Other Telecommunications” firms potentially affected by our action can be considered small.

5. Cable Service Providers

212. Because section 706 of the Act requires us to monitor the deployment of broadband using any technology, we anticipate that some broadband service providers may not provide telephone service. Accordingly, we describe below other types of firms that may provide broadband services, including cable companies, MDS providers, and utilities, among others.

213. *Cable and Other Subscription Programming.* The U.S. Census Bureau defines this industry as establishments primarily engaged in operating studios and facilities for the broadcasting of programs on a subscription or fee basis. The broadcast programming is typically narrowcast in nature (e.g. limited format, such as news, sports, education, or youth-oriented). These establishments produce programming in their own facilities or acquire programming from external sources. The programming material is usually delivered to a third party, such as cable systems or direct-to-home satellite systems, for transmission to viewers. The SBA size standard for this industry establishes as small, any company in this category that has annual receipts of \$41.5 million or less. According to 2012 U.S. Census Bureau data, 367 firms operated for the entire year. Of that number, 319 operated with annual receipts of less than \$25 million a year and 48 firms operated with annual receipts of \$25 million or more. Based on this data, the Commission estimates that the majority of firms in this industry are small.

214. *Cable Companies and Systems (Rate Regulation).* The Commission has developed its own small business size standards for the purpose of cable rate regulation. Under the Commission's rules, a “small cable company” is one serving 400,000 or fewer subscribers nationwide. Industry data indicate that there are 4,600 active cable systems in the United States. Of this total, all but five cable operators nationwide are small under the 400,000-subscriber size standard. In addition, under the Commission's rate regulation rules, a “small system” is a cable system serving 15,000 or fewer subscribers. Commission records show 4,600 cable systems nationwide. Of this total, 3,900 cable systems have fewer than 15,000 subscribers, and 700 systems have 15,000 or more subscribers, based on the same records. Thus, under this standard as well, we estimate that most cable systems are small entities.

215. *Cable System Operators (Telecom Act Standard).* The Communications Act of 1934, as amended, also contains a size standard for small cable system operators, which is “a cable operator that, directly or through an affiliate, serves in the aggregate fewer than 1% of all subscribers in the United States and is not affiliated with any entity or entities whose gross annual revenues in the aggregate exceed

\$250,000,000.” As of 2019, there were approximately 48,646,056 basic cable video subscribers in the United States. Accordingly, an operator serving fewer than 486,460 subscribers shall be deemed a small operator if its annual revenues, when combined with the total annual revenues of all its affiliates, do not exceed \$250 million in the aggregate. Based on available data, we find that all but five incumbent cable operators are small entities under this size standard. We note that the Commission neither requests nor collects information on whether cable system operators are affiliated with entities whose gross annual revenues exceed \$250 million. Therefore, we are unable at this time to estimate with greater precision the number of cable system operators that would qualify as small cable operators under the definition in the Communications Act.

6. All Other Telecommunications

216. *Electric Power Generators, Transmitters, and Distributors.* This U.S. industry is comprised of establishments that are primarily engaged in providing specialized telecommunications services, such as satellite tracking, communications telemetry, and radar station operation. This industry also includes establishments primarily engaged in providing satellite terminal stations and associated facilities connected with one or more terrestrial systems and capable of transmitting telecommunications to, and receiving telecommunications from, satellite systems. Establishments providing Internet services or voice over Internet protocol (VoIP) services via client-supplied telecommunications connections are also included in this industry. The closest applicable SBA category is “All Other Telecommunications.” The SBA’s small business size standard for “All Other Telecommunications” consists of all such firms with gross annual receipts of \$35 million or less. For this category, U.S. Census Bureau data for 2012 show that there were 1,442 firms that operated for the entire year. Of these firms, a total of 1,400 had gross annual receipts of less than \$25 million and 15 firms had annual receipts of \$25 million to \$49,999,999. Consequently, we estimate that under this category and the associated size standard the majority of these firms can be considered small entities

E. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements for Small Entities

217. We expect the rules adopted in the *Third Report and Order* will impose new or additional reporting, recordkeeping, and/or other compliance obligations on small entities. Specifically, we establish

new reporting and disclosure requirements for fixed and mobile broadband providers to facilitate compliance with the Broadband DATA Act. For example, we require fixed providers to report the availability of mass-market broadband Internet access services on the basis of whether the services are residential or business in nature. We also adopt speed thresholds for reporting fixed broadband services and require reporting on latency for fixed technologies. With regard to reporting by mobile broadband Internet access services providers, we require for each 4G LTE or 5G-NR propagation map that a provider submits, a second set of maps showing Reference Signal Received Power (RSRP) signal levels from each active cell site that the Commission may use to prepare “heat maps,” showing signal strength levels. Further, we require mobile service providers to submit, on a case-by-case basis, their choice of either infrastructure information or on-the-ground test data as part of a Commission investigation and verification of a mobile service provider’s coverage data. Finally, we require mobile providers to report both voice and broadband subscription data under the rules in effect on July 1, 2019, for all future Form 477 submissions.

218. We also adopt measures to verify, challenge, and supplement the broadband availability data filed by providers, which create new reporting, recordkeeping, and/or other compliance obligations for small entities and other providers. For example, we require all providers to provide a certification as to the accuracy of a provider’s semiannual filing from a certified professional engineer or corporate engineering officer that is employed by the provider and has direct knowledge of, or responsibility for, the generation of the provider’s Digital Opportunity Data Collection filing. Further, we create standards for collecting broadband data from State, local, and Tribal mapping entities and third parties that meet certain criteria, and adopt user friendly processes for challenges to fixed broadband coverage submissions and to the data in Fabric adopted in the *Second Order and Third Further Notice*. Finally, we establish standards for the enforcement of filing requirements consistent with the applicable provisions of the Broadband DATA Act.

219. The requirements we adopt in the *Third Report and Order* continue the Commission's actions to comply with the Broadband DATA Act and develop better quality, more useful, and more granular broadband deployment data to advance our statutory obligations and continue our efforts to close the digital divide. We conclude it is necessary to adopt these rules to produce broadband deployment

maps that will allow the Commission to precisely target scarce universal service dollars to where broadband service is lacking. We are cognizant, however, of the need to ensure that the benefits resulting from use of the data outweigh the reporting burdens imposed on small entities. The Commission believes that any additional burdens imposed by our revised reporting approach for providers are outweighed by the significant benefit to be gained from more precise broadband deployment data. We are likewise cognizant that small entities will incur costs and may have to hire attorneys, engineers, consultants or other professionals to comply with the *Third Report and Order*. Although the Commission cannot quantify the cost of compliance with the requirements in the *Third Report and Order*, we believe the reporting and other requirements we have adopted are necessary to comply with the Broadband DATA Act and ensure the Commission obtains complete and accurate broadband coverage maps.

F. Steps Taken to Minimize the Significant Economic Impact on Small Entities, and Significant Alternatives Considered

220. The RFA requires an agency to describe any significant, specifically small business, alternatives that it has considered in reaching its approach, which may include the following four alternatives (among others): (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for such small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for such small entities. The Commission has considered the comments in the record and is mindful of the time, money, and resources that some small entities will incur to comply with requirements in the *Third Report and Order*. In reaching the requirements we adopted in the *Third Report and Order*, there were various approaches and alternatives that the Commission considered but rejected which prevented small entities from incurring additional burdens and economic impact. For example, we declined to collect data on non-mass market broadband services such as might be purchased by healthcare organizations, schools and libraries, and government entities, in addition to mass market service data required in the Digital Opportunity Data Collection, although a number of comments supported requiring such a collection. We also declined to adopt any of the alternative tiers for reporting download and upload speeds for broadband Internet access service offered at speeds below 25/3 Mbps by

fixed broadband providers as proposed in comments. Instead, we adopted the two tiers the Commission proposed in the *Second Order and Third Further Notice* which use the same speed floor as existing reporting for Form 477 data and will maintain consistency for providers with that collection and provide information on the availability of services offered at a wide range of speeds. Further, we declined to adopt proposals to require fixed broadband providers to report more detailed data on latency than what the Commission proposed in the *Second Order and Third Further Notice*. Lastly, as it pertains to the standards for the collection and reporting of data for mobile broadband Internet access service, we also declined to require mobile providers to submit additional coverage maps based on different speed, cell edge probability, or cell loading values.

221. As part of the Commission's process for verifying broadband availability data submitted by providers, we adopted the requirement that service providers submit, upon the request of the Commission staff on a case-by-case basis as part of an inquiry concerning a mobile service provider's coverage data, either infrastructure information or on-the-ground test data for the location(s) under examination, rather than mandating the submission of infrastructure information by providers and on a specific reporting interval. With this approach, we provide small entities and other providers the flexibility to choose the type of data reporting that best fits their circumstances and such reporting is only required if there is an inquiry from Commission staff. To substantiate the accuracy of data submissions by mobile and fixed service providers, the *Third Report and Order* requires providers to submit a certification from a qualified engineer that the engineer has reviewed and supports the submission and attests that the statements of fact contained in the submission are true and correct and prepared in accordance with the service provider's ordinary course of network design and engineering. To meet this requirement, small entities can use an existing employee who is a certified professional engineer and are not required to hire a new in-house engineer or an engineer consultant in order to certify its data submissions which could have a significant economic impact.

222. The Broadband DATA Act requires the Commission to adopt rules to establish a user-friendly challenge process through which consumers, State, local, and Tribal governmental entities, and other entities or individuals may submit coverage data to challenge the accuracy of the coverage maps, broadband availability information submitted by providers, or information included in the Fabric. The

challenge process rules adopted by the Commission have implications for small entities as a party submitting a challenge or as a party being challenged. We believe our challenge process rules adopting a single online platform for use by all parties for submitting and tracking challenges and crowdsource information, implementing an automatic notification to the challenged party when a challenge has been submitted, and adopting a 60 day response period for the challenged party, rather than 30 days as proposed in the *Second Order and Third Further Notice*, are user friendly and cost minimizing steps that will benefit small entities.

223. Other steps taken by the Commission to minimize the compliance burdens on small entities include the technical assistance that the Commission staff will provide pursuant to the requirements of the Broadband DATA Act. In a joint effort, OEA and the Consumer and Governmental Affairs Bureau (CGB) will host at least one workshop in each of the 12 Bureau of Indian Affairs regions within one year following adoption of the *Third Report and Order*. The Bureau and Office shall publish a public notice announcing the workshop date, time, location, and agenda prior to each workshop. Next, the Broadband DATA Act requires the Commission to establish a process in which a provider that has fewer than 100,000 active broadband Internet access service connections may request and receive assistance from the Commission with respect to GIS data processing to ensure that the provider is able to comply with the Broadband DATA Act in a timely and accurate manner. Therefore, we will make help-desk support available to providers that have fewer than 100,000 active broadband Internet access service connections and provide clear instructions on the form for the Digital Opportunity Data Collection in order to aid small providers in making their filings.

224. The Broadband DATA Act also requires the Commission to provide technical assistance to consumers and State, local, and Tribal governmental entities—some of which include small entities, with respect to the challenge process. Such technical assistance must include detailed tutorials and webinars and must make Commission staff available to provide assistance, as needed, throughout the entirety of the challenge process. Accordingly, a joint effort OEA and CGB will make detailed webinars available to explain the challenge process to consumers and State, local, and Tribal governments. Additionally, the names and contact information of Commission staff who are available to assist consumers, State, local, and Tribal governments with the challenge process will be made available.

225. The Commission believes that the actions we have taken in the *Third Report and Order* and discussed herein, to ensure that the Commission has precise, accurate data on broadband deployment, and the resources that we will provide small entities to assist with compliance, strike the appropriate balance to carry out our obligations under the Broadband DATA Act and to minimize the economic impact for small entities.

A. Report to Congress

226. The Commission will send a copy of the *Third Report and Order*, including this FRFA, in a report to Congress pursuant to the Congressional Review Act. In addition, the Commission will send a copy of the *Third Report and Order*, including this FRFA, to the Chief Counsel for Advocacy of the SBA. A copy of the *Third Report and Order* and FRFA (or summaries thereof) will also be published in the **Federal Register**.

V. PROCEDURAL MATTERS

227. *Final Regulatory Flexibility Analysis.* The Regulatory Flexibility Act of 1980, as amended (RFA), requires that an agency prepare a regulatory flexibility analysis for notice and comment rulemakings, unless the agency certifies that “the rule will not, if promulgated, have a significant economic impact on a substantial number of small entities.” Accordingly, we have prepared a Final Regulatory Flexibility Analysis (FRFA) concerning the possible impact of the rule changes contained in this *Third Report and Order* on small entities. The FRFA is set forth in Appendix B.

228. *Paperwork Reduction Act.* This document does not contain new or modified information collection requirements subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. In addition, therefore, it does not contain any new or modified information collection burden for small business concerns with fewer than 25 employees, pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, *see* 44 U.S.C. 3506(c)(4).

229. *Congressional Review Act.* The Commission has determined, and the Administrator of the Office of Information and Regulatory Affairs, Office of Management and Budget, concurs that this rule is non-major under the Congressional Review Act, 5 U.S.C. § 804(2). The Commission will send a copy of this Order on Remand to Congress and the Government Accountability Office pursuant to 5 U.S.C. § 801(a)(1)(A).

230. *Contact Person.* For further information about this proceeding, contact Kirk Burgee, FCC Wireline Competition Bureau, Competition Policy Division, 45 L Street, NE., Washington, D.C. 20554, (202) 418-1599, Kirk.BurgEE@fcc.gov, or Garnet Hanly, FCC Wireless Telecommunications Bureau, Competition Policy Division, 45 L Street, NE, Washington, D.C. 20554, (202) 418-0995, Garnet.Hanly@fcc.gov.

VI. ORDERING CLAUSES

231. Accordingly, IT IS ORDERED that, pursuant to sections 1-4, 7, 201, 254, 301, 303, 309, 319, 332, and 641-646 of the Communications Act of 1934, as amended, 47 U.S.C. 151-154, 157, 201, 254, 301, 303, 309, 319, 332, and 641-646, this *Third Report and Order* IS ADOPTED.

232. IT IS FURTHER ORDERED that Parts 1 and 54 of the Commission's rules ARE AMENDED as set forth in Appendix A of the *Third Report and Order*.

233. IT IS FURTHER ORDERED that the *Third Report and Order* SHALL BE effective 30 days after publication in the **Federal Register**.

234. IT IS FURTHER ORDERED that the Commission's Consumer & Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of the *Third Report and Order* to Congress and the Government Accountability Office pursuant to the Congressional Review Act, *see* 5 U.S.C. 801(a)(1)(A).

235. IT IS FURTHER ORDERED that the Commission's Consumer & Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this *Third Report and Order*, including

the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

List of Subjects

47 CFR Part 1

Administrative practice and procedure, Broadband, Reporting and recordkeeping requirements, Telecommunications.

47 CFR Part 54

Reporting and recordkeeping requirements, Telecommunications.
Federal Communications Commission.

Marlene Dortch,

Secretary.

Final Rules

For the reasons discussed in the preamble, the Federal Communications Commission amends 47 CFR part 1 as follows:

PART 1 – PRACTICE AND PROCEDURE

1. The authority citation for part 1 continues to read as follows:

Authority: 47 U.S.C. chs. 2, 5, 9, 13; 28 U.S.C. 2461, unless otherwise noted.

2. Amend § 1.80 by revising Table 1 to paragraph (b)(10) to read as follows:

Table 1 to paragraph (b)(10)-- Base Amounts for Section 503 Forfeitures

Forfeitures	Violation amount
Misrepresentation/lack of candor	(1)
Failure to file required DODC required forms, and/or filing materially inaccurate or incomplete DODC information	\$15,000
Construction and/or operation without an instrument of authorization for the service	\$10,000
Failure to comply with prescribed lighting and/or marking	10,000
Violation of public file rules	10,000
Violation of political rules: reasonable access, lowest unit charge, equal opportunity, and discrimination	9,000
Unauthorized substantial transfer of control	8,000
Violation of children's television commercialization or programming requirements	8,000
Violations of rules relating to distress and safety frequencies	8,000
False distress communications	8,000
EAS equipment not installed or operational	8,000
Alien ownership violation	8,000
Failure to permit inspection	7,000
Transmission of indecent/obscene materials	7,000
Interference	7,000
Importation or marketing of unauthorized equipment	7,000
Exceeding of authorized antenna height	5,000
Fraud by wire, radio or television	5,000
Unauthorized discontinuance of service	5,000
Use of unauthorized equipment	5,000
Exceeding power limits	4,000
Failure to respond to Commission communications	4,000
Violation of sponsorship ID requirements	4,000
Unauthorized emissions	4,000
Using unauthorized frequency	4,000
Failure to engage in required frequency coordination	4,000
Construction or operation at unauthorized location	4,000

Violation of requirements pertaining to broadcasting of lotteries or contests	4,000
Violation of transmitter control and metering requirements	3,000
Failure to file required forms or information	3,000
Failure to make required measurements or conduct required monitoring	2,000
Failure to provide station ID	1,000
Unauthorized pro forma transfer of control	1,000
Failure to maintain required records	1,000

3. Amend § 1.7001 by revising paragraph (a)(16) to read as follows:

§ 1.7001 Scope and content of filed reports

(a) * * *

(16) *Provider*. A facilities-based provider of fixed or mobile broadband Internet access service.

* * * * *

4. Amend § 1.7004 by:

- a. Adding a new sentence at the end of paragraph (c)(1) introductory text;
- b. Redesignating paragraphs (c)(1)(i) and (ii) as paragraphs (iii) and (iv) and adding new paragraphs (c)(1)(i) and (ii);
- c. Adding paragraphs (c)(2)(ii)(E) and (c)(3)(v); and
- d. Revising paragraph (d).

The revisions and additions read as follows:

§ 1.7004 Scope, content, and frequency of Digital Opportunity Data Collection filings

* * * * *

(c) * * *

(1) * * * In addition, fixed broadband Internet service providers shall indicate, for each polygon shapefile or location they submit in the Digital Opportunity Data Collection, whether the reported service is available to residential customers and/or business customers.

(i) Each provider of fixed broadband Internet access service shall report the maximum advertised download and upload speeds associated with its broadband Internet access service available in an area. However, for service offered at speeds below 25 Mbps downstream/3 Mbps upstream, providers shall report the maximum advertised download and upload speeds associated with the service using two speed tiers: one for speeds greater than 200 kbps in at least one direction and

less than 10 Mbps downstream/1 Mbps upstream, and another for speeds greater than or equal to 10 Mbps downstream/1 Mbps upstream and less than 25 Mbps downstream/3 Mbps upstream.

(ii) Each provider of fixed broadband Internet access service shall indicate in its Digital Opportunity Data Collection filing whether the network round-trip latency associated with each maximum speed combination reported in a particular geographic area is less than or equal to 100 milliseconds (ms), based on the 95th percentile of measurements.

(2) ***

(ii) ***

(E) The geographic coordinates.

* * * * *

(3) * * *

(v) For each 4G LTE or 5G-NR propagation map that a provider submits, the provider also must submit a second set of maps showing Reference Signal Received Power (RSRP) signal levels in dBm, as would be measured at the industry standard of 1.5 meters above ground level (AGL), from each active cell site. A second set of maps showing Received Signal Strength Indicator (RSSI) signal levels for each 3G propagation map a provider submits is only required in areas where 3G is the only technology the provider offers. The RSSI and RSRP values should be provided in 10 dB increments or finer beginning with a maximum value of -50 dBm and continuing to -120 dBm.

* * * * *

(d) Providers shall include in each Digital Opportunity Data Collection filing a certification signed by a corporate officer of the provider that the officer has examined the information contained in the submission and that, to the best of the officer's actual knowledge, information, and belief, all statements of fact contained in the submission are true and correct. All providers also shall submit a certification of the accuracy of its submissions by a qualified engineer. The engineering certification shall state that the certified professional engineer or corporate engineering officer is employed by the provider and has direct knowledge of, or responsibility for, the generation of the provider's Digital Opportunity Data Collection

filing. If a corporate officer is also an engineer and has the requisite knowledge required under the Broadband DATA Act, a provider may submit a single certification that fulfills both requirements. The certified professional engineer or corporate engineering officer shall certify that he or she has examined the information contained in the submission and that, to the best of the engineer's actual knowledge, information, and belief, all statements of fact contained in the submission are true and correct, and in accordance with the service provider's ordinary course of network design and engineering.

5. Amend § 1.7006 by adding paragraphs (c) through (f) to read as follows:

§ 1.7006 Data Verification.

* * * * *

(c) *Mobile service verification process for mobile providers.* Mobile service providers shall submit either infrastructure information or on-the-ground test data in response to a request by Commission staff as part of their inquiry to independently verify the accuracy of the mobile provider's coverage propagation models and maps. In addition to submitting either on-the-ground data or infrastructure data, a provider may also submit data collected from transmitter monitoring software. A provider must submit its data, in the case of both infrastructure information and on-the-ground data, within 60 days of receiving a Commission staff request. Regarding on-the-ground data, a provider must submit evidence of network performance based on a sample of on-the-ground tests that is statistically appropriate for the area tested.

(d) *Fixed service challenge process.* State, local, and Tribal governmental entities, consumers, and other entities or individuals may submit data in an online portal to challenge the accuracy of the coverage maps at a particular location, any information submitted by a provider regarding the availability of broadband Internet access service, or the Fabric.

(1) Challengers must provide in their submissions:

- (i) Name and contact information (e.g., address, phone number, e-mail);
- (ii) The street address or geographic coordinates (latitude/longitude) of the location(s) at which broadband Internet access service coverage is being challenged;
- (iii) Name of provider whose reported coverage information is being challenged;
- (iv) Category of dispute, selected from pre-established options on the portal;
- (v) For consumers challenging availability data or the coverage maps, evidence and details of a

request for service (or attempted request for service), including the date, method, and content of the request and details of the response from the provider, or evidence showing no availability at the disputed location (e.g., screen shot, e-mails);

(vi) For government or other entities, evidence and details about the dispute, including: (A) the challenger's methodology, (B) the basis for determinations underlying the challenge, and (C) communications with provider, if any, and outcome;

(vii) For challengers disputing locations in the Broadband Location Fabric, details and evidence about the disputed location;

(viii) For customer or potential customer availability or coverage map challengers, a representation that the challenger resides or does business at the location of the dispute or is authorized to request service there; and

(ix) A certification from an individual or an authorized officer or signatory of a challenger that the person examined the information contained in the challenge and that, to the best of the person's actual knowledge, information, and belief, all statements of fact contained in the challenge are true and correct.

(2) The online portal shall alert a provider if there has been a challenge with all required elements submitted against it.

(3) For availability and coverage map challenges, within 60 days of receiving an alert, a provider shall reply in the portal by:

(i) Accepting the allegation(s) raised by the challenger, in which case the provider shall submit a correction for the challenged location in the online portal within 30 days of its portal reply; or

(ii) Denying the allegation(s) raised by the challenger, in which case the provider shall provide evidence, in the online portal and to the challenger, that the provider serves (or could and is willing to serve) the challenged location. If the provider denies the allegation(s) raised by the challenger, then the provider and the challenger shall have 60 days after the provider submits its reply to attempt to resolve the challenge.

(4) A provider's failure to respond to a challenge to its reported coverage data within the applicable timeframes shall result in a finding against the provider, resulting in mandatory corrections to the

provider's Digital Opportunity Data Collection information to conform to the challenge. Providers shall submit any such corrections within 30 days of the missed reply deadline or the Commission will make the corrections on its own and incorporate such change into the coverage maps.

(5) Once a challenge containing all the required elements is submitted in the online portal, the location shall be identified on the coverage maps as "in dispute/pending resolution."

(6) If the parties are unable to reach consensus within 60 days after submission of the provider's reply in the portal, then the affected provider shall report the status of efforts to resolve the challenge in the online portal, after which the Commission, will review the evidence and make a determination, either:

(i) In favor of the challenger, in which case the provider shall update its Digital Opportunity Data Collection information within 30 days of the decision; or

(ii) In favor of the provider, in which case the location will no longer be subject to the "in dispute/pending resolution" designation on the coverage maps.

(7) In consumer challenges to availability and coverage map data, a consumer's challenge must make an initial showing, by a preponderance of the evidence, that a provider's data are inaccurate; a provider must then provide evidence showing, by a preponderance of the evidence, that its reported data are accurate.

(8) In challenges to availability and coverage data by governmental (State, local, Tribal), or other entities, the challenger must make a detailed, clear and methodologically sound showing, by clear and convincing evidence, that a provider's data are inaccurate.

(9) For challenges to the Fabric, after a challenge has been filed containing the required information in paragraph (d)(1) of this section, the provider will receive a notice of the challenge from the online portal and can respond to the challenge in the online portal, but is not required to do so, and the Commission shall seek to resolve such challenges within 60 days of receiving the challenge filing in the online portal.

(10) Government entities or other entities may file challenges at multiple locations in a single challenge, but each challenge must contain all of the requirements set forth in (d)(1) of this section.

(11) The Commission shall make public information about the location that is the subject of the challenge (including the street address and/or coordinates (latitude and longitude)), the name of the provider, and any relevant details concerning the basis for the challenge.

(e) *Mobile service challenge process for consumers.* Consumers may submit data to challenge the accuracy of mobile broadband coverage maps. Consumers may challenge mobile coverage data based on lack of service or on poor service quality such as slow delivered user speed.

(1) Consumer challengers must provide in their submissions:

(i) Name and contact information (e.g., address, phone number, and/or email address);

(ii) The name of the provider being challenged;

(iii) Speed test data. Consumers must take all speed tests outdoors. Consumers shall indicate whether each test was taken in an in-vehicle mobile or outdoor pedestrian environment.

Consumers must use a speed test application that has been designated by Office of Engineering and Technology, in consultation with Office of Economics and Analytics and the Wireless Telecommunications Bureau, for use in the challenge process;

(iv) A certification that the challenger is a subscriber or authorized user of the provider being challenged;

(iv) A certification that the speed test measurements were taken outdoors; and

(v) A certification that, to the best of the person's actual knowledge, information, and belief, the handset and the speed test application are in ordinary working order and all statements of fact contained in the submission are true and correct.

(2) The Office of Economics and Analytics, in consultation with the Wireless Telecommunications Bureau, will determine the threshold number of mobile consumer challenges within a specified area that will constitute a cognizable challenge that triggers the obligation for a provider to respond.

(3) For areas with a cognizable challenge, providers either must submit a rebuttal to the challenge within a 60-day period of being notified of the challenge or concede and have the challenged area identified on the mobile coverage map as an area that lacks sufficient service.

(4) To dispute a challenge, a mobile service provider must submit on-the-ground test data or infrastructure data to verify its coverage map(s) in the challenged area. The Office of Economics and

Analytics and the Wireless Telecommunications Bureau will develop the specific requirements and methodologies that providers must use in conducting on-the-ground testing and in providing infrastructure data. To the extent that a service provider believes it would be helpful to the Commission in resolving a challenge, it may choose to submit other data in addition to the data initially required, including but not limited to either infrastructure or on-the-ground testing (to the extent such data are not the primary option chosen by the provider) or other types of data such as data collected from network transmitter monitoring systems or software, or spectrum band-specific coverage maps. Such other data must be submitted at the same time as the primary on-the-ground testing or infrastructure rebuttal data submitted by the provider. If needed to ensure an adequate review, the Office of Economics and Analytics may also require that the provider submit other data in addition to the data initially submitted, including but not limited to either infrastructure or on-the-ground testing data (to the extent not the option initially chosen by the provider) or data collected from network transmitter monitoring systems or software (to the extent available in the provider's network).

(5) If a mobile service provider that has failed to rebut a challenge subsequently takes remedial action to improve coverage at the location of the challenge, the provider must notify the Commission of the actions it has taken to improve its coverage and provide either on-the-ground test data or infrastructure data to verify its improved coverage.

(6) In cases where a mobile service provider concedes or loses a challenge, the provider must file, within 30 days, geospatial data depicting the challenged area that has been shown to lack sufficient service. Such data will constitute a correction layer to the provider's original propagation model-based coverage map, and Commission staff will use this layer to update the broadband coverage map. In addition, to the extent that a provider does not later improve coverage for the relevant technology in an area where it conceded or lost a challenge, it must include this correction layer in its subsequent Digital Opportunity Data Collection filings to indicate the areas shown to lack service.

(f) *Mobile service challenge process for State, local, and Tribal governmental entities; and other entities or individuals.* State, local, and Tribal governmental entities and other entities or individuals may submit data to challenge accuracy of mobile broadband coverage maps. They may challenge mobile coverage

data based on lack of service or poor service quality such as slow delivered user speed.

(1) State, local, and Tribal governmental entities and other entity or individual challengers must provide in their submissions:

(i) Government and other entity challengers may use their own software to collect data for the challenge process. When they submit their data, however, it must contain the following metrics for each test:

(A) The geographic coordinates of the test(s) (i.e., latitude/longitude);

(B) The name of the service provider being tested;

(C) The consumer-grade device type(s), brand/model, and operating system used for the test;

(D) The download and upload speeds;

(E) The latency data;

(F) The date and time of the test;

(G) Whether the test was taken in an in-vehicle mobile or outdoor, pedestrian stationary environment, and if mobile, whether the test was conducted with the antenna outside of the vehicle;

(H) For an in-vehicle test, the vehicle speed the vehicle was traveling when the test was taken, if available;

(I) The signal strength, if available;

(J) An indication of whether the test failed to establish a connection with a mobile network at the time and place it was initiated;

(K) The network technology (e.g., LTE, 5G) and spectrum band(s) used for the test; and

(L) The location of the server to which the test connected;

(ii) A complete description of the methodology(ies) used to collect their data; and

(iii) Challengers must substantiate their data through the certification of a qualified engineer or official.

(2) Challengers must conduct speed tests using a device advertised by the challenged service provider as compatible with its network and must take all speed tests outdoors.

(3) The Office of Economics and Analytics, in consultation with the Wireless Telecommunications

Bureau, will determine the threshold number of challenges within a specified area that will constitute a cognizable challenge that triggers the obligation for a provider to respond.

(4) For areas with a cognizable challenge, providers either must submit a rebuttal to the challenge within a 60-day period of being notified of the challenge or concede and have the challenged area identified on the mobile coverage map as an area that lacks sufficient service.

(5) To dispute a challenge, a mobile service provider must submit on-the-ground test data or infrastructure data to verify its coverage map(s) in the challenged area. The Office of Economics and Analytics and the Wireless Telecommunications Bureau will develop the specific requirements and methodologies that providers must use in conducting on-the-ground testing and in providing infrastructure data. To the extent that a service provider believes it would be helpful to the Commission in resolving a challenge, it may choose to submit other data in addition to the data initially required, including but not limited to either infrastructure or on-the-ground testing (to the extent such data are not the primary option chosen by the provider) or other types of data such as data collected from network transmitter monitoring systems or software or spectrum band-specific coverage maps. Such other data must be submitted at the same time as the primary on-the-ground testing or infrastructure rebuttal data submitted by the provider. If needed to ensure an adequate review, the Office of Economics and Analytics may also require that the provider submit other data in addition to the data initially submitted, including but not limited to either infrastructure or on-the-ground testing data (to the extent not the option initially chosen by the provider) or data collected from network transmitter monitoring systems or software (to the extent available in the provider's network).

(6) If a provider that has failed to rebut a challenge subsequently takes remedial action to improve coverage at the location of the challenge, the provider must notify the Commission of the actions it has taken to improve its coverage and provide either on-the-ground test data or infrastructure data to verify its improved coverage.

(7) In cases where a mobile service provider concedes or loses a challenge, the provider must file, within 30 days, geospatial data depicting the challenged area that has been shown to lack service. Such data will constitute a correction layer to the provider's original propagation model-based

coverage map, and Commission staff will use this layer to update the broadband coverage map. In addition, to the extent that a provider does not later improve coverage for the relevant technology in an area where it conceded or lost a challenge, it must include this correction layer in its subsequent Digital Opportunity Data Collection filings to indicate the areas shown to lack service.

6. Amend § 1.7008 by revising paragraphs (d)(1) introductory text and (d)(2) and adding paragraph (d)(3) as follows:

§ 1.7008 Creation of broadband Internet access service coverage maps.

* * * * *

(d)(1) The Commission shall collect verified data for use in the coverage maps from:

* * * * *

(2) To the extent they choose to file verified data, such government entities and third parties shall follow the same filing process as providers submitting their broadband Internet access service data in the Digital Opportunity Data Collection portal.

(3) Providers shall review the verified data submitted by governments and third parties in the online portal, work with the submitter to resolve any coverage discrepancies, make any corrections they deem necessary based on such review, and submit any updated data to the Commission within 60 days of the date that the provider is notified that the data has been submitted in the online portal by the government entity or third party.

7. Revise § 1.7009 to read as follows:

§ 1.7009 Enforcement.

(a) It shall be unlawful for an entity or individual to willfully and knowingly, or recklessly, submit information or data as part of the Digital Opportunity Data Collection that is materially inaccurate or incomplete with respect to the availability or the quality of broadband internet access service. Such action may lead to enforcement action and/or penalties as set forth in the Communications Act and other applicable laws.

(b) Failure to make the Digital Opportunity Data Collection filing in accordance with the Commission's rules and the instructions to the Digital Opportunity Data Collection may lead to enforcement action pursuant to the Communications Act of 1934, as amended, and any other applicable law.

(c) For purposes of this section, “materially inaccurate or incomplete” means a submission that contains omissions or incomplete or inaccurate information that the Commission finds has a substantial impact on its collection and use of the data collected in order to comply with the requirements of 47 U.S.C. §§ 641-646.

(d) Providers must file corrected data when they discover inaccuracy, omission, or significant reporting error in the original data that they submitted, whether through self-discovery, the crowdsource process, the challenge process, the Commission verification process, or otherwise.

(1) Providers must file corrections within 30 days of their discovery of incorrect or incomplete data; and

(2) The corrected filings must be accompanied by the same types of certifications that accompany the original filings.

PART 54 – [AMENDED].

8. The authority citation for part 54 continues to read as follows:

Authority: 47 U.S.C. 151, 154(i), 155, 201, 205, 214, 219, 220, 229, 254, 303(r), 403, 1004, 1302, and 1601-1609, unless otherwise noted.

Subpart N [Removed]

9. Remove subpart N, consisting of §§ 54.1400 through 54.1403.